

Questions for Mr. Paul Morinville President, U.S. Inventor

1. I understand that within our draft framework you have concerns about our potential changes to Section 112(f). Can you explain why your organization is concerned that such changes could negatively impact small inventors? Are there any changes to the language we've put out there that could address your concerns while also providing a mechanism to narrow overbroad patents?

Dear Senator Tillis and Staff:

- a. *“Can you explain why your organization is concerned that such changes could negatively impact small inventors?”*

US Inventor strongly objects to the draft 100(k) and 112(f) language. These should not be part of legislation to fix 101 because they are not related to the problems created by errant 101 jurisprudence, 100 and 112 are working well and stable, and the unintended consequences of adding 100(k) and changing 112(f) are unknown and likely to be damaging.

No due diligence identifying the unintended consequences to the proposed changes to 112(f) and to 100(k) has been done.

Both proposed changes are a reaction to the narrative that “bad patents” being

asserted. If this is a problem, it certainly should be addressed.

However, there are very few examples of “bad patents” being asserted and those examples are dubious at best even though they have an outsized emotional effect. Indeed, now as in the past, most examples are theoretical, not actual.

Importantly, Octane Fitness opened the breadth of cases that can be subjected to fee reversal, which is a strong deterrent to asserting “bad patents”.

Due diligence requires that specific examples of “bad patents” being improperly asserted be brought forward and analyzed to identify the root cause of system failure. Only then can Congress fix the root cause and only then can unintended consequences be minimized.

Small entities have an outsized effect on job creation and development of breakthrough technologies, yet they are the most damaged by the effects of degrading patent protection. Which is unfortunate because investment in early stage firms commercializing new technologies that compete with huge incumbents is nearly 100% predicated on the strength of patents protecting those new technologies. If inventions cannot be protected by patents, investors put their money elsewhere.

The draft language of 112(f) will encourage and enable infringement because patents will become unenforceable if the inventor misses only one possible way of doing the same thing.

To compensate, specifications, drawings and claims will become huge documents of hundreds or thousands of pages making it nearly impossible to identify the true invention. This places an undue burden, not only on inventors writing the application and investors performing due diligence to ensure there are no holes, but also on patent examiners, trial courts and appeal courts due to size and complexity of the resulting specifications, drawings and claims.

This will discourage investors from even starting due diligence due to the costs of hiring technical experts to identify potential holes.

There can be hundreds of ways to implement any given claim element. A set of claims often has dozens of elements in each of the independent and dependent claims. This means that there could be hundreds or even thousands of options detailed in the specification to cover each of the claim elements.

An inventor must imagine every possible way and explain each in detail in the specification. If even one is missed, an infringer can take advantage of the omission by creating a product that actually infringes but can escape infringement by implementing a small change that the inventor missed.

For example, if an invention uses a hinging mechanism to hold two objects together, the inventor must identify and detail all possible ways of constructing a hinging mechanism. That could be two door hinges, one piano hinge, steel loops passing through drilled holes, bendable metal, fabric, tape, leather, squid skin, and any other possible way of connecting two objects such that they pivot along the same line. Each must be described in detail in the specification even if that hinging motion is not the inventive concept.

If the inventor misses just one possible way, or if a hinging technology changes during the life of the patent, an infringer can copy the invention and the inventor cannot stop the infringement.

Doing this is impossible for software related inventions. There are 571 programming languages. Each language has multiple ways of accomplishing the same thing.

One example is the term inheritance¹ which is a common term in programming has a well-known meaning.

Object orientated programming is only one of dozens of coding paradigms, but we can use it for this example because the concept of inheritance is well understood despite the different implementations under different coding paradigms.

According to Wikipedia: “In object-oriented programming,² inheritance is the mechanism of basing an object³ or class⁴ upon another object (prototype-based inheritance⁵) or class (class-based inheritance⁶), retaining similar implementation. Also defined as deriving new classes (sub classes⁷) from existing ones (super class or base class⁸) and forming them into a hierarchy of classes. In most class-based object-oriented languages, an object created through inheritance (a "child object") acquires all the properties and behaviors of the parent object (except: constructors⁹, destructor, overloaded operators and friend functions of the base class).”

Inheriting attributes of a parent to a child or a child to a parent in a hierarchical structure can be accomplished in multiple ways in each coding language and under each coding paradigm. There are 571 computer programming languages. This means that there may be thousands of ways to program inheritance that must be technically detailed in the specification.

The same is true for hundreds of other well-known functions in software development.

It is impossible to do this for several reasons. Most people only know a handful of languages and nobody can program in all languages. The very nature of code is to expand the functionality of code to write applications for endless possibilities. Therefore, there are so many ways to accomplish the same thing in code, that it is virtually impossible to figure out every single way.

If a new programming language comes out after the patent is filed, the inventor cannot capture the implementation of the claim elements in the new language and therefore a hole is created after the fact.

Even if the case law develops to allow pseudo code, which can apply across programming languages, there are just too many ways that each claim element can be

¹ [https://en.wikipedia.org/wiki/Inheritance_\(object-oriented_programming\)](https://en.wikipedia.org/wiki/Inheritance_(object-oriented_programming))

² https://en.wikipedia.org/wiki/Object-oriented_programming

³ [https://en.wikipedia.org/wiki/Object_\(computer_science\)](https://en.wikipedia.org/wiki/Object_(computer_science))

⁴ [https://en.wikipedia.org/wiki/Class_\(computer_programming\)](https://en.wikipedia.org/wiki/Class_(computer_programming))

⁵ https://en.wikipedia.org/wiki/Prototype-based_programming

⁶ https://en.wikipedia.org/wiki/Class-based_programming

⁷ [https://en.wikipedia.org/wiki/Inheritance_\(object-oriented_programming\)#Subclasses_and_superclasses](https://en.wikipedia.org/wiki/Inheritance_(object-oriented_programming)#Subclasses_and_superclasses)

⁸ https://en.wikipedia.org/wiki/Fragile_base_class

⁹ [https://en.wikipedia.org/wiki/Constructor_\(object-oriented_programming\)](https://en.wikipedia.org/wiki/Constructor_(object-oriented_programming))

implemented in pseudo code. Depending on the function, there could be hundreds of ways.

112(f) has the potential of making all inventions related to software effectively unpatentable. Since more than half of all inventions now incorporate some sort of software, this has the potential to bring great damage on our innovation engine.

Effectively, it will be better to copyright software in every possible language rather than patent it. But the public is not served because copyright terms are much longer and inventions protected by copyright will not transfer to the public domain for as long as 75 years, rather than the 20 years of a patent.

b. “Are there any changes to the language we’ve put out

there that could address your concerns while also

providing a mechanism to narrow overbroad patents?”

Asking us for language changes to further weaken patent protections this is like asking the hens for a fair schedule of times to let in the fox. We maintain that Section 101 (a) and (b) along with the provisions eliminating 101 exceptions are sufficient and no further changes are needed. Adding the draft language os 100(k) and 112(f) will likely damaging to all stakeholders, including inventors and startups. The only group not harmed will be big tech.

The “over broad” or “bad patent” complaint comes from people with their hands too often caught in the cookie jar. They never point out that existing law already checks “over broad” claims and “bad patents”.

It is simply not true that 112 as it currently stands is not consistently enforced or not effective. The complaints of “bad patents” are vague and unsubstantiated. Never do they explain why a patent should fail 112 in any detail sufficient to prove their point. If there are “bad patents” that should fail 112, we would see court cases, but we do not.

False political narratives condense complicated issues into an object and then villainize the object. Once a villain is created, its evil can be expanded to encompass anything you don’t like. When you have pushed enough bad stuff into the moniker, you can simply state its evil name and Congress will magically pass laws in your favor to kill the villain.

Big tech defines a “bad patent”¹⁰ as a “trivial variation”, an “abstract building block or technology”, or “so poorly written that it’s impossible to understand what it

¹⁰ <https://www.patentprogress.org/2017/07/12/bad-patents-bad-results/>

covers.”. It is an emotional argument conjuring up feelings anger and righteous indignation because “bad patents” are used to shake down innocent multinational corporations for something as inconsequential as patent infringement.

But what makes a “bad patent” bad? The answer should be found through logic and reasoning – not emotion and righteousness. Because patents are economic instruments, there must be a net negative economic effect for a patent to be “bad.” The reasonable question should ask if the patent creates a negative economic effect that is greater than its positive economic effect.

Fortunately, in February, big tech gave the Senate Judiciary Subcommittee’s 101 round table some examples of “bad patents”: a method of proposing marriage,¹¹ a method of swinging on a swing,¹² and Amazon’s one-click patent.¹³ So, let’s evaluate whether these patents have a net negative economic effect. (If you want to see more “bad patents” they are available at the Electronic Frontier Foundation,¹⁴ or Patent Progress,¹⁵ both of which are big tech lobbyists masquerading as nonprofits.)

The Positive Economic Effect of Patents:

All three patents were examined by the USPTO. The method of proposing marriage was not issued, but Amazon’s one-click patent and the swinging on a swing patent were both issued.

In all three, the USPTO was paid examination fees. In two, the USPTO was paid maintenance fees. It is likely that all three hired patent professionals in the economy. All were disclosed to the public, so others were able to advance the art by inventing around or improving it. Therefore, all three have the positive economic effects of funding the USPTO, hiring patent professionals and advancing the art.

The Negative Economic Effect of Litigating Patents:

Around 97% of patents are never litigated because they are either not commercially viable (not useful) thus not infringed, or not commercially valuable thus damages are too small to return the cost of litigation. But when a patent is commercially viable and valuable, and it is litigated, both sides expend resources and experience uncertainty, which are highly disruptive to their businesses.

While both parties experience negative economic effects in litigation, in most cases the infringer is a resource-rich multinational corporation, and the patent holder is a resource-starved small entity: an independent inventor, a startup or an investor, or sometimes a non-practicing entity (NPE) acting on their behalf.

¹¹ <https://patents.google.com/patent/US20070078663A1/en>

¹² <https://patents.google.com/patent/US6368227B1/en>

¹³ <https://en.wikipedia.org/wiki/1-Click>

¹⁴ <https://www.eff.org/issues/stupid-patent-month>

¹⁵ <https://www.patentprogress.org/2017/07/12/bad-patents-bad-results/>

Due to this resource asymmetry, the negative economic effects are by far more severe for the patent holder than for the large infringing corporation.

It is a simple fact that a patent does not cause litigation. A patent is a piece of paper. The infringer can cause it by the act of infringing, or the patent holder can cause it by asserting the patent outside its scope. However, the patent itself does nothing and therefore cannot be attributed negative economic effects.

This fact alone means that there can be no “bad patents.” However, since many in Congress seem to have accepted the false narrative of “bad patents” running around destroying innovation, let’s investigate further.

The Infringer’s Negative Economic Effect:

Many years before a patent is issued, most patent applications are published on the USPTO website. All patents are also published there. The USPTO has a search engine as does Google and others, so anyone can find patents relevant to their business simply by searching the USPTO website or Google Patents. Patent infringement is illegal, so anyone in business has a responsibility to identify patents that they may infringe to avoid breaking the law.

That means that if a patent is litigated within the scope of its claims against an infringing product, the infringer knew (or should have known) the patent existed and that their product was infringing. Therefore, the infringer caused litigation by the act of infringing, thus the negative economic effects must be attributed to the infringer.

When a large competitor infringes a startup’s patent, the startup has no good choices. It can sue the infringer, but that means it must divert already scarce resources into litigation and away from business activities like engineering, marketing, sales, etc. Resources burned in litigation may never be recovered because loss rates for patent holders are unreasonably high.

Since eBay v MercExchange, injunctive relief is now restricted so in the unlikely event the startup wins the infringement suit, the court will grant a compulsory license, not an injunction. The resource-starved startup will be forced to compete with the resource-rich infringer. Due to resource asymmetry and a very real risk that the infringer will use their deep pockets and existing market power to take the market and kill the startup, the startup will have difficulty attracting investment. When a startup sues an infringer, the startup may very well fail whether it wins the infringement case or loses.

Many startups ignore infringement. They accept that they are forced to compete against a large infringer. At least they won’t have to divert resources to litigation. But for the same asymmetrical reasons the startup will have difficulty attracting investment and is at risk of being run out of business.

The negative economic effects caused by infringement are damaging not only to the infringed startup, but also our nation's innovation engine and our national security. When startups die and their investors lose money, investors invest their money in places where they get better protection, like China. For example, in 2017 48% of early stage funding for artificial intelligence went to startups in China – only 36% went to U.S. startups.¹⁶

The “patent troll” narrative attributes all negative economic effects to the patent holder regardless of the cause of litigation even though the infringer is the sole party who can avoid the act of infringement. The patent holder cannot avoid the act of infringement. In fact, the patent holder attempted to discourage infringement by filing for patent protection. The negative economic effects of infringement must be attributed to the infringer and law should recognize this by discouraging infringement with injunctive relief, low costs and quick resolutions.

The Patent Holder's Negative Economic Effect:

If a patent is litigated outside the scope of the claims, and thereby against a non-infringing product, the patent owner caused litigation. Thus, the negative economic effects must be attributed to the patent holder.

The negative economic effects to businesses that have been wrongly sued for patent infringement have been made known, so they need not to be regurgitated here. Unfortunately, the overreaction by Congress, the USPTO and courts have wiped out patent protection for small entities.

“Bad Patents” Have a Positive Economic Effect:

The method of proposing marriage was never issued. It was a patent application, so it can never be litigated and therefore can't produce a negative economic effect. This big tech example of a “bad patent” is nothing but a disingenuous attempt to sway Congress with false information.

Nobody sues anyone without a potential damages award because money spent litigating will never be returned. No damages can be calculated for a method of swinging on a swing because nobody is making any money doing it. Since there could be no damages awarded, money spent litigating would not be returned. This patent was never litigated and is another disingenuous attempt to sway Congress.

But what about the “bad patents” that big tech says are too trivial to rate patenting, like Amazon's one-click?

Nobody can invent anything without improving what already exists, so all inventions are in some way an improvement. Sometimes a trivial improvement

¹⁶ <https://www.theverge.com/2018/2/22/17039696/china-us-ai-funding-startup-comparison>

becomes the primary factor differentiating the marketability of one product over another. Amazon's one-click patent was a trivial improvement that had a significant market effect. It made the buying experience on Amazon's site better than that of Amazon's competitors, thereby drawing customers to Amazon's site and away from competitors. It is one of the early reasons that Amazon got ahead of its competitors and therefore became the outrageously successful company it has become.

Amazon's one-click patent did not affect its competitors' products. Their customers could still use them just as they did prior to the one-click patent. Therefore, Amazon's patent did not have a negative economic effect on any technology already on the market. But it had a significant effect on the marketability of Amazon's products, which is an advancement of the art and a positive economic effect.

The mistake the "bad patent" narrative makes is that a patent is less a technical instrument than it is an economic instrument. Yes, a patent discloses advancements in technology, so patents are technical instruments. And yes, most of these advancements are trivial from the perspective of technology. But many are not trivial in their market effect.

Nobody does the hard work and spends money writing and filing a patent for the sheer joy of advancing technology. People do it to improve their lot in life. They do it for profit. A patent is an instrument of profit. It is an economic instrument, and it must be treated as such to encourage people to advance technology by filing patents.

The degree to which an invention improves the mountain of technology on which we live is not important for any given invention. It is the accumulation of many trivial improvements that is important, because some trivial improvements may turn out to be very important. For example, Edison's lightbulb was a trivial improvement from a technical perspective. All he really figured out was that a carbonized thread used as a filament would last long enough to create a marketable lightbulb. But everything else in a light bulb already existed, even filaments. He just advanced it a little bit with a carbonized thread.

If we buy into the big tech "bad patent" narrative and agree that only big inventions should be worthy of patenting, there will be less trivial inventions. But we will never get a critical mass of trivial inventions needed for that one that matters, like a carbonized thread filament.

We will have to subjectively decide which inventions are significant enough to rate a patent. Who can answer that question? Certainly, not a patent examiner and I don't think we have any former Soviet central planners employed at the USPTO. Maybe we should do what we have for the last two plus centuries and let the market decide. After all, if the invention is so trivial that the market does

not adopt it, there can be no litigation and therefore no negative economic effects.

Just as the false “patent troll” narrative wrongly villainized early stage investors as greedy rent seekers, the false “bad patent” narrative wrongly considers patents to be technical instruments, ignoring all positive economic effects and wrongly attributing all negative economic effects to the patent instead of to the party causing the infringement.

Both false narratives dangerously teach a fundamental misunderstanding of how patents achieve their Constitutional mandate to “promote the Progress of Science and useful Arts.” Without correcting this misunderstanding of patents, bad public policy will continue.

One must also understand what motivates big tech to market the false “bad patent” narrative.

Big tech monopolies are built on business methods. They have leveraged these business methods to capture huge exclusive markets larger than most countries.

With captured markets, they control access to the markets and have created their own shadow patent systems. This is sovereign control over markets by a private corporation and is damaging to free markets.

A patent is nothing but an exclusive right. All it can do is stop someone from infringing. However, that incredible power enables startups with patents to attract investment, commercialize new technologies, and challenge incumbents.

A patent’s value is driven by demand and market size. Patents are granted by the government of a country, so they are only valid within that country’s borders. The larger the country, the larger the market, and the more valuable the patent can become.

But the Internet has broken down national borders. Big tech corporations like Apple, Google and Amazon have created multinational markets crossing national borders. These markets are bigger than the populations of most countries.

Markets for big tech products are not restricted to national borders. Apple with its 1.4 billion active devices reaches four times more consumers than the United States population of 327 million people.

Apps are software programs running on devices. Most apps are business methods designed to sell goods and services. Apple restricts its operating system to only run apps made for their device, so Apple’s App Store is the only place you can get an iPhone app.

Apple controls its megamarket in a similar way that a patent restricts access to a national market by denying access to apps that appear to be “copying”

*another app. Apple requires apps to be “useful” and “unique”.*¹⁷

These requirements are effectively the same requirements of patentability under U.S. patent law which determine if an invention is “unique” under Sections 102 and 103 and “useful” under Section 112. Apple has created a shadow patent system that displaces the U.S. patent system.

But there are important differences. A U.S. patent is examined by an unbiased patent examiner in a public process following due process of law including access to a court, a jury and appeals, and only a U.S. court can remove an infringer from the market.

*Apple has none of those protections. Non-disclosure agreements forbid app providers from disclosing any information about Apple’s shadow patent process or the decisions they make.*¹⁸

Apple explicitly denies market access to “apps for any content or behavior that we believe is over the line”. The “line” is defined as “I’ll know it when I see it”. Apple restricts free speech by denying access to what it considers to be “offensive”. This includes “mean-spirited content” likely to “humiliate” someone, the very reason free speech is protected in the United States.

Google, Amazon and other big tech monopolies have their own megamarkets with similar market controls.

But Apple’s process is arbitrary. Apple denies “apps for any content or behavior that we believe is over the line”. The “line” is defined as “I’ll know it when I see it”. Apple restricts free speech by denying access to what it considers to be “offensive”. This includes “mean-spirited content” likely to “humiliate” someone, the very reason free speech is protected in the United States.

*Big tech corporations have effectively become sovereign powers over their megamarkets even taxing providers, but not themselves.*¹⁹

*Amazon also exercises monopoly control over their megamarket, but in a slightly different way. Amazon has complete control of who can and cannot sell products in their market, and they accept most products. But an Amazon program allows sellers to accuse other sellers of patent infringement. When they do, Amazon lawyers decide cases and resolve them by removing an infringer or allow it to keep selling. Like Apple, there is no due process, no appeals, and no public scrutiny.*²⁰

¹⁷ <https://developer.apple.com/app-store/review/guidelines/>

¹⁸ <https://www.mobiloud.com/blog/avoid-app-rejected-apple/>

¹⁹ <https://www.macobserver.com/news/spotify-eu-complaint-apple/>

²⁰ <https://www.ipwatchdog.com/2019/05/02/newest-patent-litigation-venue-district-amazon-federal-court/id=108808/>

Google search is the largest of the megamarkets with 1.17 billion search engine users worldwide performing 2 trillion searches per year. Google uses its search algorithm to control competition.^{21 22 23 24 25 26}

In all big tech megamarkets, there is an implied threat that your app can be denied market access, or your company can be driven to the bottom of news feeds and search results effectively making it disappear.

Big tech multinationals operate on the thin outer edge of technology – the browser. The core technologies of their businesses are business methods, including app stores (Apple and Google) page ranking algorithms (Google), “like” or “friend” buttons (Facebook), shopping carts (Amazon), online auctions (eBay), and many more. Most apps peddled in their app stores are also business methods.

Because big tech corporations are all built on business methods, the only thing that can challenge them is another better patented business method.

Big tech’s shadow patent system protects apps on their megamarkets, which are also built on business processes.

It is no wonder why big tech and app providers advocate to eliminate patent protection for business methods.

Eliminating Section 101 exceptions threatens the foundation of big tech dominance by enabling startups with better technology to challenge them and eliminates their shadow patent system by putting apps back under the U.S. patent system.

If an app provider or their investors advocate against big tech on issues like patent reform or antitrust, they risk being denied market access.

For example, Josh Kushner, Jared Kushner’s brother, runs a venture capital firm, called Thrive Capital²⁷, that invests in media and internet companies.

²¹ <http://exclusive.multibriefs.com/content/online-travel-business-are-googles-algorithms-stifling-competition/travel-hospitality-event-management>

²² <https://torontosun.com/2017/07/09/how-google-stifled-the-competition/wcm/f971399a-59f4-4f20-989b-64a46833991f>

²³ <https://www.theatlantic.com/technology/archive/2010/02/how-googles-ad-system-stifles-innovation/36531/>

²⁴ <http://exclusive.multibriefs.com/content/online-travel-business-are-googles-algorithms-stifling-competition/travel-hospitality-event-management>

²⁵ <https://torontosun.com/2017/07/09/how-google-stifled-the-competition/wcm/f971399a-59f4-4f20-989b-64a46833991f>

²⁶ <https://www.theatlantic.com/technology/archive/2010/02/how-googles-ad-system-stifles-innovation/36531/>

²⁷ <https://www.thrivecap.com/>

Current and past investments include Oscar²⁸, Slack²⁹, Robinhood³⁰, Stripe³¹, Spotify³², Mapbox³³, Twitch³⁴, and GitHub³⁵, all of which have apps sold on Apple App Store or Google Play. Mapbox testified to the House Judiciary Committee in support of patent reform legislation weakening business method patents.³⁶

Business methods must be patentable, or we must resign ourselves to only a few big tech monopolies to compete with thousands of foreign startups.

101 exceptions deny patents primarily for business methods and software inventions. These are the core technologies underpinning big tech monopolies, and as such, only patented business methods and software can challenge the dominance of big tech monopolies.

101 exceptions have served big tech by eliminating competition from uppity inventors with better technology. It is a shield protecting the core of their monopolies. But it also protects big tech megamarkets that they fully control through app stores because apps are also built on business methods and software.

For example, Apple has 1.4 billion active devices, four times the population of the US. The only way to put a product on this market is through Apple's App Store. 101 exceptions make apps untouchable, and therefore Apple's monopoly control over its megamarket is also untouchable.

Eliminating 101 exceptions threatens the very core of big tech monopolies. But, when other industries objected to codifying 101 exceptions, Senators Tillis and Coons eliminated the exceptions. Big tech then pushed the 100 and 112 changes into the draft to stealthily pass the damage to those provisions.

Huawei released phones with 5G long before Apple. Huawei also has superior technology in many other areas. While Apple's phone sales are dropping because of being out-teched by Huawei, their services revenue is rising. The bulk of Apple's services revenue comes from the App Store. So, Apples' focus is not on better phone technology. It is on focused on increasing phone app revenue.

It is not surprising that Apple has lobbied hard to eliminate patent protection for phone app technologies. Both the app store and the apps can only be disrupted by patented business methods and software. It's about preserving their monopoly.

²⁸ <https://www.hioscar.com/>

²⁹ <https://slack.com/>

³⁰ <https://robinhood.com/>

³¹ <https://stripe.com/>

³² <https://www.spotify.com/us/>

³³ <https://www.mapbox.com/>

³⁴ <https://www.twitch.tv/>

³⁵ <https://github.com/>

³⁶ <https://www.ipwatchdog.com/2017/09/07/following-money-mapbox-kushners-president-trump/id=87509/>

But in China, business methods and software are protected by patents. Huawei uses Android to provide its phone apps, so its focus is on developing phone technology in a patent system that protects it.

It should surprise no one that Huawei leads Apple in technology.

Three patentability requirements do the job of eliminating overly broad patents:

- 1) Prior art invalidity (anticipation and obviousness) will prevent an inventor from having rights in ideas that are so broad that the art would inevitably come up with them.*
- 2) Existing “written description” requirements under section 112 require the inventor to show “possession” of the claimed invention at the time of filing.*
- 3) Existing “enablement” requirements under section 112 make it mandatory that the written description advance the art, by forcing the description to enable persons of ordinary skill in the art to make or use the invention without undue experimentation. And*
- 4) the reverse doctrine of equivalents is and infringement defense that serves as a final check.*

If we are forced to choose any legislative change to quiet the detractors in exchange for the language presented to fix 101 and omit the draft language of 100(k) and 112(f), consider codifying the reverse doctrine of equivalents, with inventor protections.

This is a Supreme Court rule that says a later device that literally infringes might be judged non-infringing, if it uses future-developed technology that transforms the principle of operation so far that it factually doesn't represent the invention anymore.

But to prevent gamesmanship, any codification should do three things:

- a) instill a pleading requirement that the pleader must first admit literal infringement in order to open the gate to this defense,*
- b) require a clear and convincing burden of proof on the part of the infringer (both burden of persuasion and burden of production), and*
- c) create a presumption of willfulness and enhancement of damages if the defense fails and there is liability.*

We are happy to work with the committee on any of these legislative changes. Codifying the reverse doctrine of equivalents would avoid the tidal wave of unfair and unintended consequences that amending 112(f) would create. Codifying it with the above-named protections would also add minimal disruption to the inventor community because the defense is based on existing law.

Another concession we are willing to make in exchange for the language presented to fix 101 is to extend CBMs for up to four years. This will give Congress time to perform due diligence on 100 and 112 so that the unintended consequences can be identified, and legislation can be written to minimize unintended consequences.

Proposing this would also be a nice “put up or shut up” moment to see who really

wants a fair system, versus one where little guys get bullied by big guys who just want to take things without paying.

Questions for the Record for Mr. Paul Morinville
Senate Committee on the Judiciary
Subcommittee on Intellectual Property
Hearing on “The State of Patent Eligibility in America: Part II”
June 5, 2019

QUESTIONS FROM SENATOR BLUMENTHAL

1. Striking the appropriate balance between encouraging innovation and protecting consumers is a key goal of our patent system.

- a. **What impact will broadening the subject matter that can be patented have on industry?**

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These requirements are effectively the same requirements of patentability under U.S. patent law which determine if an invention is “unique” under Sections 102 and 103 and “useful” under Section 112. Apple has created a shadow patent system that displaces the U.S. patent system.

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Apple has none of those protections. Non-disclosure agreements forbid app providers from disclosing any information about Apple’s shadow patent process or the decisions they make.²

Apple explicitly denies market access to “apps for any content or behavior that we believe is over the line”. The “line” is defined as “I’ll know it when I see it”. Apple restricts free speech by denying access to what it considers to be “offensive”. This includes “mean-spirited content” likely to “humiliate” someone, the very reason free speech is protected in the United States.

Google, Amazon and other big tech monopolies have their own megamarkets with similar market controls.

But Apple’s process is arbitrary. Apple denies “apps for any content or behavior that we believe is over the line”. The “line” is defined as “I’ll know it when I see it”. Apple restricts free speech by denying access to what it considers to be “offensive”. This includes “mean-spirited content” likely to “humiliate” someone, the very reason free speech is protected in the United States.

Big tech corporations have effectively become sovereign powers over their megamarkets even taxing providers, but not themselves.³

Amazon also exercises monopoly control over their megamarket, but in a slightly different way. Amazon has complete control of who can and cannot sell products in their market, and they accept most products. But an Amazon program allows sellers to accuse other sellers of patent infringement. When they do, Amazon lawyers decide cases and resolve them by removing an infringer or allow it to keep selling. Like Apple, there is no due process, no appeals, and no public scrutiny.⁴

² <https://www.mobiloud.com/blog/avoid-app-rejected-apple/>

³ <https://www.macobserver.com/news/spotify-eu-complaint-apple/>

⁴ <https://www.ipwatchdog.com/2019/05/02/newest-patent-litigation-venue-district-amazon-federal-court/id=108808/>

Google search is the largest of the megamarkets with 1.17 billion search engine users worldwide performing 2 trillion searches per year. Google uses its search algorithm to control competition.^{5 6 7 8 9 10}

In all big tech megamarkets, there is an implied threat that your app can be denied market access, or your company can be driven to the bottom of news feeds and search results effectively making it disappear.

Big tech multinationals operate on the thin outer edge of technology – the browser. The core technologies of their businesses are business methods, including app stores (Apple and Google) page ranking algorithms (Google), “like” or “friend” buttons (Facebook), shopping carts (Amazon), online auctions (eBay), and many more. Most apps peddled in their app stores are also business methods.

Because big tech corporations are all built on business methods, the only thing that can challenge them is another better patented business method.

Big tech’s shadow patent system protects apps on their megamarkets, which are also built on business processes.

It is no wonder why big tech and app providers advocate to eliminate patent protection for business methods.

Eliminating Section 101 exceptions threatens the foundation of big tech dominance by enabling startups with better technology to challenge them and eliminates their shadow patent system by putting apps back under the U.S. patent system.

If an app provider or their investors advocate against big tech on issues like patent reform or antitrust, they risk being denied market access.

For example, Josh Kushner, Jared Kushner’s brother, runs a venture capital firm, called Thrive Capital¹¹, that invests in media and internet companies. Current and past

⁵ <http://exclusive.multibriefs.com/content/online-travel-business-are-googles-algorithms-stifling-competition/travel-hospitality-event-management>

⁶ <https://torontosun.com/2017/07/09/how-google-stifled-the-competition/wcm/f971399a-59f4-4f20-989b-64a46833991f>

⁷ <https://www.theatlantic.com/technology/archive/2010/02/how-googles-ad-system-stifles-innovation/36531/>

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investments include Oscar¹², Slack¹³, Robinhood¹⁴, Stripe¹⁵, Spotify¹⁶, Mapbox¹⁷, Twitch¹⁸, and GitHub¹⁹, all of which have apps sold on Apple App Store or Google Play. Mapbox testified to the House Judiciary Committee in support of patent reform legislation weakening business method patents.²⁰

Business methods must be patentable, or we must resign ourselves to only a few big tech monopolies to compete with thousands of foreign startups.

Many fields of invention will again be patent eligible. Patents that have been effectively been invalidated, meaning that 101 exceptions have created too much risk to defend the patents, will again be defensible.

This will do three things:

- 1. It will increase competition because startups commercializing inventions will again be able to attract investment at the earliest stages, which has collapsed due to 101 exceptions, primarily the abstract idea.*

This will encourage formation of startups equipped to challenge incumbents and to compete with China for dominance in tech industries.

- 2. And, it will create a flurry of economic activity as patents are bought up by corporations that have chosen to infringe, thus returning the investment of hard work and money to inventors and investors, which will give new life to inventing and commercializing inventions by startups because there is a possible return in doing so.*
- 3. It will stimulate the secondary market for patent assets providing an outlet for patents assets that will return investment to investors and inventors. The resurgence of the secondary market will further encourage investment in startups by providing that outlet in the event the startup fails.*

b. What impact will broadening the subject matter that can be patented have on consumers?

¹² <https://www.hioscar.com/>

¹³ <https://slack.com/>

¹⁴ <https://robinhood.com/>

¹⁵ <https://stripe.com/>

¹⁶ <https://www.spotify.com/us/>

¹⁷ <https://www.mapbox.com/>

¹⁸ <https://www.twitch.tv/>

¹⁹ <https://github.com/>

²⁰ <https://www.ipwatchdog.com/2017/09/07/following-money-mapbox-kushners-president-trump/id=87509/>

Patents are often referred to as monopolies. But it is a fundamental misunderstanding of how patents work to enhance competition. The truth is that a patent is a natural anti-monopoly.

In a functioning patent system, inventions become investible assets when they are patented, and the value of the invention increases as market demand increases. Because of the direct relationship between market demand and patent value, a patented invention can attract enough investment to compete with entrenched incumbents in the market for the invention.

This effect introduces new competitors into the market who are protected against incumbents for a long enough period that they can survive after the patent expires. Thus, patents act to increase competition by introducing new competitors into the market and thereby create competitive markets. But perhaps even more important, some inventions deliver a strong dose of creative destruction to monopolistic incumbents who did not innovate fast enough, and those companies fail clearing the market of dead weight and opening the market to innovative new companies.

Patents are the ultimate anti-monopoly in a free market. But for this work, the market must function undisturbed by crony laws and regulations. A patent must be a presumed valid exclusive Right.

The Exclusive Right Creates Market Scarcity

Like any free market, the value of an invention is determined by variations in supply and demand. Demand for an invention cannot be increased or decreased for an invention except by market effects outside of the invention. But supply is different.

If supply for an invention is unlimited, the value of the invention is zero no matter how high demand goes. Therefore, an invention with unlimited supply has no value and can never attract investment. The problem of unlimited supply was corrected by the Founders who wisely constructed a patent as an “exclusive Right” in the U.S. Constitution. (The word Right is used only once in the Constitution and capitalized in the original.)

The exclusive Right creates scarcity in the market for the invention – it prevents anyone other than the inventor from commercializing an invention protected by a patent. This limits supply so that demand can act to increase the patent’s value. Thus, the exclusive Right creates an investible asset that can be collateralized to attract enough investment to commercialize an invention and supply it at a level that meets demand.

The exclusive Right also keeps entrenched competition on the sidelines allowing the startup to build the substantial resources necessary to compete against entrenched competition when the patent expires.

The exclusive Right encourages everyday people to invent and patent their inventions because a patent generates a value in relation to demand of the invention. They can license it, sell it, or commercialize it, but whatever way they choose, they get the investment of their hard work and money returned.

Without the exclusive Right, huge incumbents take marketable inventions and massively commercialize them by leveraging their established markets and deep pockets thereby excluding from the market all others who cannot match their resources. The big win and the little lose. The inventor who risked so much to get their piece of the American Dream is left with a booklet of paper, a line on their resume, and tens or hundreds of thousands of dollars in debt, while the huge multinational thief gets even bigger. Without patents monopolies are perpetuated.

Patents Are Most Valuable at the Earliest Stages of a Startup.

In a perfect system, when an inventor invents something and files for patent protection, the startup has no customers, no product, no employees, and no sales, marketing, production or distribution capabilities. In most cases, there are no assets that can be collateralized to attract investment other than a patent.

At this early stage, demand for an invention is not known and will not be known until the product is created and put on the market. This is the point of highest risk for the inventor and investors. They bet it all on the patent's exclusive Right that will create economic scarcity thus limiting supply, and their own calculations of future demand.

Nobody can accurately project demand for an invention until it is tested with a viable product on the market. So, the first investment a startup attracts (often called angel or seed investment) is often just enough to prove demand. As the startup tests demand, it creates a product, attracts a core team and builds other investible assets.

If demand is proven and assets are built, the startup may attract venture capitalists (VC) who invest bigger money. Each subsequent round of VC funding builds more investible assets, so the patent becomes less and less valuable in relation to the other assets in investment decisions.

It is important to note that the first investment is primarily based on the patent and its presumed valid exclusive Right. This first investment is the most important investment because without it there can be no further investment. Without the first investment, the startup does not start.

Patents are Anti-Monopolies Only When Law Supports Free Markets

Patent's anti-monopoly power is only effective if a patent is truly an exclusive Right that is presumed valid because there is a legitimate belief that the courts will uphold it.

The U.S. government has abandoned protecting patents for startups on multiple levels. Injunctive relief is highly restricted due to eBay v MercExchange, the PTAB

remains a killing field wiping out over 80% of challenged patents, 101 exceptions have destroyed business method and software patents, patent suits must be filed at the headquarters of the infringer creating venue chaos radically increasing risks and costs, damages models have been obliterated crashing damages awards as a result, the rational tests for obviousness are gone replaced with hindsight bias, and much more. There is no longer any presumption of validity and no longer an exclusive Right.

Virtually every decision coming from any branch of the U.S. government related to patent protection in the last fifteen years has gone against startups, independent inventors and other small entities. These decisions have tilted the field so far in favor of big tech that there are no longer continent fee attorneys and no investors. The small cannot even get their day in court.

Today, big tech cannot be challenged with better technology because the only effective tool enabling competition has been destroyed. Judicially created Section 101 exceptions specifically target business methods and software inventions – the very type of inventions that make up the core business models of the big tech giants. Business methods that are today unpatentable subject matter include page ranking algorithms (Google), “like” or “friend” buttons (Facebook), shopping carts (Amazon), online auctions (eBay), and many more. But big tech defends 101 exceptions because they have already monopolized these technologies and patents are the sole threat to their monopolies.

The sad result is that big tech multinationals know that if they steal an invention, they can easily invalidate the patent. They also know that even if they fail to invalidate it and they lose an infringement case, the worst that will happen is they will be awarded a compulsory license with damages calculated by an liberal arts major in a robe who has never started up a company or marketed a product, and cannot possibly know what the market value of an invention is. If they steal it, they keep it and the cost is lower than licensing it in the free market.

Big tech multinationals simply watch and wait as new startups are built on new business methods and software. If the startup earns significant market adoption, big tech swoops in and copies the business method into their own platform. Then, leveraging their monopolistic user bases, search algorithms, data mining, endlessly deep pockets, app stores, and oligopoly relationships, they drive market saturation to their own platforms, thus running the startup out of business and burning all that was invested into it. The inventor and their investors are powerless to stop it.

Their business models are safe from creative destruction served up by a startup with better technology, and they have monopolized as a result. So now politicians consider enforcing anti-trust laws against big tech to end the abuse of their monopolistic positions. It is beyond unfortunate that it is now necessary to use anti-trust laws to restore free markets by breaking up big tech’s operating control of these markets.

If the U.S. government had not destroyed the patent system, startups with better technologies could disrupt big tech and more competition would be inserted into the market. Big tech companies not innovating faster than startups would be cleansed from the market replaced by more innovative companies. Free and competitive markets would return without government intervention because patents are a natural anti-monopoly.

Consumers will soon benefit with more innovation and lower prices as startups begin to provide products that large corporations have ignored, especially those running monopolized app stores.

The companies producing products that gain market acceptance will be acquired by larger corporations, who specialize on expanding production and reducing costs. This will return investment to startup investors and executive and they will startup new companies.

c. Could these reforms increase consumer prices? If so, in what industries or on what products?

Increased competition does not raise prices. It increases options, improves quality and lowers prices.

Prices will come down because big corporations will be subjected to increased competition from more agile startups.

**Questions for the Record for Paul Morinville
From Senator Mazie K. Hirono**

1. Last year, Judge Alan Lourie and Judge Pauline Newman of the Federal Circuit issued a concurring opinion to the court's denial of *en banc* rehearing in *Berkheimer v. HP Inc.*, in which they stated that "the law needs clarification by higher authority, perhaps by Congress, to work its way out of what so many in the innovation field consider are § 101 problems."

Do you agree with Judges Lourie and Newman? Does § 101 require a Congressional fix or should we let the courts continue to work things out?

Yes. Current 101 case law cannot be deciphered or understood. It is illogical and unworkable. No inventor, no examiner, no lawyer, and no investor can know if any patent will pass muster in a trial court and if it does, in the CAFC because even the courts can't explain it. With the odds of invalidation near 67%, the risk is too high for inventors and investors to risk the investment of patenting or commercializing even meritorious inventions "protected" by a patent.

Small portfolios of patents cannot withstand the risk and do not attract contingent fee attorneys or investors to defend them against infringement. This has enabled large corporations to massively infringe on the patents owned by small entities that have only a few critical patents. Small inventors and startups cannot get their day in court.

Only large portfolios of hundreds or more patents can manage the risk of invalidation. It is not possible to invalidate all them so the few that remain after 101 challenges are defensible. Thus, big corporations can still get their day in court and often are able to license the portfolio without litigation.

The Supreme Court has shown that they are not interested in fixing the 101 demon that they themselves let loose on the market. They have refused to take up 42 cases since the Alice decision.¹

Congress must act now. The damage is wiping out an entire generation of inventors and startups. Inventors are patenting in China as a result. If we fail to act now, by default, we as a nation have agreed that we no longer value a patent system and are willing to accept the consequences.

2. The Federal Circuit rejected a "technological arts test" in its *en banc Bilski* opinion. It explained that "the terms 'technological arts' and 'technology' are both ambiguous and ever-changing." The draft legislation includes the requirement that an invention be in a "field of technology."

¹ <https://www.ipwatchdog.com/2019/06/04/todd-todd-dickinson-congress-must-act-because-scotus-has-denied-42-section-101-petitions-since-alice/id=109957/>

a. Do you consider this a clear, understood term? If so, what does it mean for an invention to be in a “field of technology”?

The CAFC was right. There is no way to define a “field of technology”. Any other definition narrows what can be patented. Since no one can know the future, this is dangerous, and will no doubt exclude entire fields of invention and discovery from patent protection.

Big tech monopolies operate on the thin outer edge of technology – the browser. Their core businesses are built on business methods: app stores (Apple and Google); page ranking algorithms (Google); “like” or “friend” buttons (Facebook); shopping carts (Amazon); and more.

Because big tech and their apps are built on business methods, the only way to challenge them is with a patented business method.

But current U.S. patent law denies patent protection for business methods and this has enabled big tech to monopolize because they cannot be challenged in their own area of technology.

Continuing to deny business methods from patent protection will perpetuate their monopolies.

The United States is looking to antitrust law to break up big tech. Unfortunately, this may have become necessary, but it will not solve the problem of big tech monopolies. That can only be solved by understanding how big tech creates megamarkets and how they use shadow patent systems to regulate and perpetuate their monopolies, a power traditionally reserved for sovereigns.

A patent is nothing but an exclusive right. All it can do is remove an infringer from the market. That incredible power enables startups to attract investment, commercialize new technologies, and challenge incumbents.

The value of a patent is dependent on demand and market size, so the larger the country, the larger the market, and the more valuable a patent can become.

But big tech markets are not restricted to national borders, so they get larger. Apple has 1.4 billion active devices reaching four times the 327 million population of the United States.

Apps are software programs running on devices. Most are business methods designed to sell goods and services. Apple restricts its operating system to only run apps made for their device, so Apple’s App Store is the only place you can get an iPhone app. This creates a megamarket and gives Apple complete control over it.

That control is manifested in a shadow patent system. Apples restricts apps that appear to be “copying” another app, and requires apps to be “useful” and “unique”. These requirements are effectively the same requirements of patentability under U.S. patent law

which determine if an invention is “unique” under Sections 102 and 103 and “useful” under Section 112.

Apple’s shadow patent system in its controlled megamarket displaces the U.S. patent system and grants Apple sovereign power over its megamarket.

But there are important differences. A U.S. patent is examined by an unbiased patent examiner in a public process following due process of law including access to a court, a jury and appeals. Only a court can remove an infringer from the market, and markets are regulated under due process of law.

Apple has none of those protections and it grants a shadow patent to all apps on the megamarket. Apple’s shadow patent is perpetual. Apple denies “apps for any content or behavior that we believe is over the line”. “line” is defined as “I’ll know it when I see it”, which is arbitrary and lawless market regulation. Non-disclosure agreements forbid app providers from disclosing any information about Apple’s shadow patent process or the decisions they make.

Google, Amazon and other big tech monopolies have their own megamarkets with similar market controls.

Big tech operates on the thin outer edge of technology – the browser. Their core businesses are built on business methods like app stores (Apple and Google); page ranking algorithms (Google); “like” or “friend” buttons (Facebook); shopping carts (Amazon); and more.

Because big tech and apps are both built on business methods, the only way to challenge them is with a patented business method. But in the U.S., business methods are denied patent protection..

b. The European Union, China, and many other countries include some sort of “technology” requirement in their patent eligibility statutes. What can we learn from their experiences?

The EU technology test can be satisfied with a simple linking to something real. If it controls an interface or produces a result, it passes the test. China’s test is similar.

100(k) will transfer 101 exclusions into 100(k) because “technology” will be defined by the same antipatent courts. No doubt business methods and software will be excluded, but there will be others.

Big tech cannot be challenged except by patented business methods and software because the core of their businesses are business methods and software.

- c. **Is a claim that describes a method for hedging against the financial risk of price fluctuations—like the one at issue in the *Bilski* case—in a “field of technology”?**
What if the claim requires performing the method on a computer?

Big tech monopolies are built on business methods. They have leveraged these business methods to capture huge exclusive markets larger than most countries.

With captured markets, they control access to the markets and have created their own shadow patent systems. This is sovereign control over markets by a private corporation, and is damaging to free markets.

A patent is nothing but an exclusive right. All it can do is stop someone from infringing. However, that incredible power enables startups with patents to attract investment, commercialize new technologies, and challenge incumbents.

A patent’s value is driven by demand and market size. Patents are granted by the government of a country, so they are only valid within that country’s borders. The larger the country, the larger the market, and the more valuable the patent can become.

But the Internet has broken down national borders. Big tech corporations like Apple, Google and Amazon have created multinational markets crossing national borders. These markets are bigger than the populations of most countries.

Markets for big tech products are not restricted to national borders. Apple with its 1.4 billion active devices reaches four times more consumers than the United States population of 327 million people.

Apps are software programs running on devices. Most apps are business methods designed to sell goods and services. Apple restricts its operating system to only run apps made for their device, so Apple’s App Store is the only place you can get an iPhone app.

Apple controls its megamarket in a similar way that a patent restricts access to a national market by denying access to apps that appear to be “copying” another app. Apple requires apps to be “useful” and “unique”.²

These requirements are effectively the same requirements of patentability under U.S. patent law which determine if an invention is “unique” under Sections 102 and 103 and “useful” under Section 112. Apple has created a shadow patent system that displaces the U.S. patent system.

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² <https://developer.apple.com/app-store/review/guidelines/>

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³ <https://www.mobiloud.com/blog/avoid-app-rejected-apple/>

⁴ <https://www.macobserver.com/news/spotify-eu-complaint-apple/>

⁵ <https://www.ipwatchdog.com/2019/05/02/newest-patent-litigation-venue-district-amazon-federal-court/id=108808/>

⁶ <http://exclusive.multibriefs.com/content/online-travel-business-are-googles-algorithms-stifling-competition/travel-hospitality-event-management>

⁷ <https://torontosun.com/2017/07/09/how-google-stifled-the-competition/wcm/f971399a-59f4-4f20-989b-64a46833991f>

⁸ <https://www.theatlantic.com/technology/archive/2010/02/how-googles-ad-system-stifles-innovation/36531/>

⁹ <http://exclusive.multibriefs.com/content/online-travel-business-are-googles-algorithms-stifling-competition/travel-hospitality-event-management>

¹⁰ <https://torontosun.com/2017/07/09/how-google-stifled-the-competition/wcm/f971399a-59f4-4f20-989b-64a46833991f>

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For example, Josh Kushner, Jared Kushner’s brother, runs a venture capital firm, called Thrive Capital¹², that invests in media and internet companies. Current and past investments include Oscar¹³, Slack¹⁴, Robinhood¹⁵, Stripe¹⁶, Spotify¹⁷, Mapbox¹⁸, Twitch¹⁹, and GitHub²⁰, all of which have apps sold on Apple App Store or Google Play. Mapbox testified to the House Judiciary Committee in support of patent reform legislation weakening business method patents.²¹

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²¹ <https://www.ipwatchdog.com/2017/09/07/following-money-mapbox-kushners-president-trump/id=87509/>

d. What changes to the draft, if any, do you recommend to make the “field of technology” requirement more clear?

US Inventor strongly objects to adding Section 100(k) and Congress should remove it from the draft. It will restrict entire fields of invention from patent protection.

Establishing any field of technology as not patentable will exclude future technologies from patenting, which hobbles investment in those fields.

3. Sen. Tillis and Sen. Coons have made clear that genes as they exist in the human body would not be patent eligible under their proposal.

Are there other things that Congress should make clear are not patent eligible? There are already statutes that prevent patents on tax strategies and human organisms. Are there other categories that should be excluded?

It is a mistake to eliminate any category of invention from patentability – including tax strategies and human organisms. The questions of whether or not these things can be patented are already sufficiently answered in 102, 103 and 112.

A human organism patent would be rejected under 102. If there is an improvement on it, it should be patentable. This will encourage research dollars to improve human organisms.

4. I have heard complaints that courts do not consistently enforce Section 112 with respect to claims for inventions in the high tech space.

a. Are these valid complaints?

101 exceptions deny patents primarily for business methods and software inventions. These are the core technologies underpinning big tech monopolies, and as such, only patented business methods and software can challenge the dominance of big tech monopolies.

101 exceptions have served big tech by eliminating competition from upstart inventors with better technology. It is a shield protecting the core of their monopolies. But it also protects big tech megamarkets that they fully control through app stores because apps are also built on business methods and software.

For example, Apple has 1.4 billion active devices, four times the population of the US. The only way to put a product on this market is through Apple’s App Store. 101 exceptions make apps untouchable, and therefore Apple’s monopoly control over its megamarket is also untouchable.

Eliminating 101 exceptions threatens the very core of big tech monopolies. But, when other industries objected to codifying 101 exceptions, Senators Tillis and Coons eliminated the exceptions. Big tech then pushed the 100 and 112 changes into the draft to stealthily pass the damage to those provisions.

Huawei released phones with 5G long before Apple. Huawei also has superior technology in many other areas. While Apple's phone sales are dropping because of being out-teched by Huawei, their services revenue is rising. The bulk of Apple's services revenue comes from the App Store. So, Apples' focus is not on better phone technology. It is on focused on increasing phone app revenue.

It is not surprising that Apple has lobbied hard to eliminate patent protection for phone app technologies. Both the app store and the apps can only be disrupted by patented business methods and software. It's about preserving their monopoly.

But in China, business methods and software are protected by patents. Huawei uses Android to provide its phone apps, so its focus is on developing phone technology in a patent system that protects it.

It should surprise no one that Huawei leads Apple in technology.

It is simply not true that 112 is not consistently enforced. The complaints of "bad patents" are made in vague terms most often specifying no patent. Never do they explain why the patent should fail 112 in any detail sufficient to prove their point. If there are "bad patents" that should fail 112, we would see court cases, but we do not.

False political narratives condense complicated issues into an object and then villainize the object. Once a villain is created, its evil can be expanded to encompass anything you don't like. When you have pushed enough bad stuff into the moniker, you can simply state its evil name and Congress will magically pass laws in your favor to kill the villain.

Big tech defines²² a "bad patent" as a "trivial variation", an "abstract building block or technology", or "so poorly written that it's impossible to understand what it covers.". It is an emotional argument conjuring up feelings anger and righteous indignation because "bad patents" are used to shake down innocent multinational corporations for something as inconsequential as patent infringement.

But what makes a "bad patent" bad? The answer should be found through logic and reason – not emotion and righteousness. Because patents are economic instruments, there must be a net negative economic effect for a patent to be "bad." The reasonable question should ask if the patent creates a negative economic effect that is greater than its positive economic effect.

Fortunately, in February, big tech gave the Senate Judiciary Subcommittee's 101 round table some examples of "bad patents": a method of proposing marriage,²³ a method of swinging on a swing,²⁴ and Amazon's one-click patent.²⁵ So, let's evaluate whether these patents have a net negative economic effect. (If you want to see more "bad patents" they are available at

²² <https://www.patentprogress.org/2017/07/12/bad-patents-bad-results/>

²³ <https://patents.google.com/patent/US20070078663A1/en>

²⁴ <https://patents.google.com/patent/US6368227B1/en>

²⁵ <https://en.wikipedia.org/wiki/1-Click>

the Electronic Frontier Foundation,²⁶ or Patent Progress,²⁷ both of which are big tech lobbyists masquerading as nonprofits.)

The Positive Economic Effect of Patents:

All three patents were examined by the USPTO. The method of proposing marriage was not issued, but Amazon's one-click patent and the swinging on a swing patent were both issued.

In all three, the USPTO was paid examination fees. In two, the USPTO was paid maintenance fees. It is likely that all three hired patent professionals in the economy. All were disclosed to the public, so others were able to advance the art by inventing around or improving it. Therefore, all three have the positive economic effects of funding the USPTO, hiring patent professionals and advancing the art.

The Negative Economic Effect of Litigating Patents:

Around 97% of patents are never litigated because they are either not commercially viable (not useful) thus not infringed, or not commercially valuable thus damages are too small to return the cost of litigation. But when a patent is commercially viable and valuable, and it is litigated, both sides expend resources and experience uncertainty, which are highly disruptive to their businesses.

While both parties experience negative economic effects in litigation, in most cases the infringer is a resource-rich multinational corporation, and the patent holder is a resource-starved small entity: an independent inventor, a startup or an investor, or sometimes a non-practicing entity (NPE) acting on their behalf. Due to this resource asymmetry, the negative economic effects are by far more severe for the patent holder than for the large infringing corporation.

It is a simple fact that a patent does not cause litigation. A patent is a piece of paper. The infringer can cause it by the act of infringing, or the patent holder can cause it by asserting the patent outside its scope. However, the patent itself does nothing and therefore cannot be attributed negative economic effects.

This fact alone means that there can be no "bad patents." However, since many in Congress seem to have accepted the false narrative of "bad patents" running around destroying innovation, let's investigate further.

The Infringer's Negative Economic Effect:

Many years before a patent is issued, most patent applications are published on the USPTO website. All patents are also published there. The USPTO has a search engine as does Google and others, so anyone can find patents relevant to their business simply by searching

²⁶ <https://www.eff.org/issues/stupid-patent-month>

²⁷ <https://www.patentprogress.org/2017/07/12/bad-patents-bad-results/>

the USPTO website or Google Patents. Patent infringement is illegal, so anyone in business has a responsibility to identify patents that they may infringe to avoid breaking the law.

That means that if a patent is litigated within the scope of its claims against an infringing product, the infringer knew (or should have known) the patent existed and that their product was infringing. Therefore, the infringer caused litigation by the act of infringing, thus the negative economic effects must be attributed to the infringer.

When a large competitor infringes a startup's patent, the startup has no good choices. It can sue the infringer, but that means it must divert already scarce resources into litigation and away from business activities like engineering, marketing, sales, etc. Resources burned in litigation may never be recovered because loss rates for patent holders are unreasonably high.

Since eBay v MercExchange, injunctive relief is now restricted so in the unlikely event the startup wins the infringement suit, the court will grant a compulsory license, not an injunction. The resource-starved startup will be forced to compete with the resource-rich infringer. Due to resource asymmetry and a very real risk that the infringer will use their deep pockets and existing market power to take the market and kill the startup, the startup will have difficulty attracting investment. When a startup sues an infringer, the startup may very well fail whether it wins the infringement case or loses.

Many startups ignore infringement. They accept that they are forced to compete against a large infringer. At least they won't have to divert resources to litigation. But for the same asymmetrical reasons the startup will have difficulty attracting investment and is at risk of being run out of business.

The negative economic effects caused by infringement are damaging not only to the infringed startup, but also our nation's innovation engine and our national security. When startups die and their investors lose money, investors invest their money in places where they get better protection, like China. For example, in 2017 48% of early stage funding for artificial intelligence went to startups in China – only 36% went to U.S. startups.²⁸

The "patent troll" narrative attributes all negative economic effects to the patent holder regardless of the cause of litigation even though the infringer is the sole party who can avoid the act of infringement. The patent holder cannot avoid the act of infringement. In fact, the patent holder attempted to discourage infringement by filing for patent protection. The negative economic effects of infringement must be attributed to the infringer and law should recognize this by discouraging infringement with injunctive relief, low costs and quick resolutions.

The Patent Holder's Negative Economic Effect:

²⁸ <https://www.theverge.com/2018/2/22/17039696/china-us-ai-funding-startup-comparison>

If a patent is litigated outside the scope of the claims, and thereby against a non-infringing product, the patent owner caused litigation. Thus, the negative economic effects must be attributed to the patent holder.

The negative economic effects to businesses that have been wrongly sued for patent infringement have been made known, so they need not to be regurgitated here. Unfortunately, the overreaction by Congress, the USPTO and courts have wiped out patent protection for small entities.

“Bad Patents” Have a Positive Economic Effect:

The method of proposing marriage was never issued. It was a patent application, so it can never be litigated and therefore can't produce a negative economic effect. This big tech example of a “bad patent” is nothing but disingenuous attempt to sway Congress with false information.

Nobody sues anyone without a potential damages award because money spent litigating will never be returned. No damages can be calculated for a method of swinging on a swing because nobody is making any money doing it. Since there could be no damages awarded, money spent litigating would not be returned. This patent was never litigated and is another disingenuous attempt to sway Congress.

But what about the “bad patents” that big tech says are too trivial to rate patenting, like Amazon's one-click?

Nobody can invent anything without improving what already exists, so all inventions are in some way an improvement. Sometimes a trivial improvement becomes the primary factor differentiating the marketability of one product over another. Amazon's one-click patent was a trivial improvement that had a significant market effect. It made the buying experience on Amazon's site better than that of Amazon's competitors, thereby drawing customers to Amazon's site and away from competitors. It is one of the early reasons that Amazon got ahead of its competitors and therefore became the outrageously successful company it has become.

Amazon's one-click patent did not affect its competitors' products. Their customers could still use them just as they did prior to the one-click patent. Therefore, Amazon's patent did not have a negative economic effect on any technology already on the market. But it had a significant effect on the marketability of Amazon's products, which is an advancement of the art and a positive economic effect.

The mistake the “bad patent” narrative makes is that a patent is less a technical instrument than it is an economic instrument. Yes, a patent discloses advancements in technology, so patents are technical instruments. And yes, most of these advancements are trivial from the perspective of technology. But many are not trivial in their market effect.

Nobody does the hard work and spends money writing and filing a patent for the sheer joy of advancing technology. People do it to improve their lot in life. They do it for profit. A

patent is an instrument of profit. It is an economic instrument, and it must be treated as such to encourage people to advance technology by filing patents.

The degree to which an invention improves the mountain of technology on which we live is not important for any given invention. It is the accumulation of many trivial improvements that is important, because some trivial improvements may turn out to be very important. For example, Edison's lightbulb was a trivial improvement from a technical perspective. All he really figured out was that a carbonized thread used as a filament would last long enough to create a marketable lightbulb. But everything else in a light bulb already existed, even filaments. He just advanced it a little bit with a carbonized thread.

If we buy into the big tech "bad patent" narrative and agree that only big inventions should be worthy of patenting, there will be less trivial inventions. But we will never get a critical mass of trivial inventions needed for that one that matters, like a carbonized thread filament.

We will have to subjectively decide which inventions are significant enough to rate a patent. Who can answer that question? Certainly, not a patent examiner and I don't think we have any former Soviet central planners employed at the USPTO. Maybe we should do what we have for the last two plus centuries and let the market decide. After all, if the invention is so trivial that the market does not adopt it, there can be no litigation and therefore no negative economic effects.

Just as the false "patent troll" narrative wrongly villainized early stage investors as greedy rent seekers, the false "bad patent" narrative wrongly considers patents to be technical instruments, ignoring all positive economic effects and wrongly attributing all negative economic effects to the patent instead of to the party causing the infringement.

Both false narratives dangerously teach a fundamental misunderstanding of how patents achieve their Constitutional mandate to "promote the Progress of Science and useful Arts." Without correcting this misunderstanding of patents, bad public policy will continue.

b. Do the proposed changes to Section 112 adequately address those complaints and limit the scope of claims to what was actually invented?

Section 112 already does this well as it stands. The case law is stable and effective and it has been for 80 years. There is no reason to change it.

USPTO Director Iancu is on record and has testified that 112 is working properly. The case law for 112 has been stable for 80 years.

If there was a reason to change it, we would see many more court cases challenging patents under 112. This has not happened.

112 is a false flag to move the problems created by 101 exceptions, which benefit only a few big tech monopolies at the expense of all others, to 100 and 112 under false and unfounded arguments of "bad patents" eating the world.

c. Are you concerned that the proposed changes will make it too easy for competitors to design around patent claims that use functional language?

US Inventor strongly objects to the draft 100(k) and 112(f) language. These should not be part of legislation to fix 101 because they are not related to the problems created by errant 101 jurisprudence, because 100 and 112 are working well and stable, and because the unintended consequences of adding 100(k) and changing 112(f) are unknown and likely to be damaging.

No due diligence identifying the unintended consequences to the proposed changes to 112(f) and to 100(k) has been done.

Both proposed changes are a reaction to the imagined problem of “bad patents” (if such a thing even exists) being asserted beyond the scope of their claims. If this is a problem, it certainly should be addressed.

However, there are very few examples of “bad patents” being asserted and those examples are dubious at best even though they have an outsized emotional effect. Indeed, now as in the past, most examples are theoretical, not actual.

While there was a perceived problem with “bad patents” prior to Alice, this was also prior to the PTAB and a myriad of other changes to address the same problem. No due diligence has been performed to tease out which of these changes played the larger role in reducing litigation of “bad patents”.

Importantly, Octane Fitness opened the breadth of cases that can be subjected to fee reversal, which is a strong deterrent to asserting “bad patents”.

It is very unlikely that “bad patents” will be able to “attack” once 101 is fixed.

Due diligence requires that specific examples of “bad patents” being improperly asserted be brought forward and analyzed to identify the root cause of system failure. Only then can Congress fix the root cause and only then can unintended consequences be minimized.

Small entities have an outsized effect on job creation and development of breakthrough technologies, yet they are the most damaged by the effects of degrading patent protection. Congress, the courts, and the USPTO have rapidly changed patent laws to degrade virtually every aspect of patent protection.

Now is not the time to continue this unfortunate trend. It is the time to deliberately perform due diligence and make the right changes in the right way.

Degraded patent protection is unfortunate because investment in early stage firms commercializing new technologies that compete with huge incumbents is nearly 100% predicated on the strength of patents protecting those new technologies. If inventions cannot be protected by patents, investors put their money elsewhere.

Any changes to patent laws must be precise and the consequences, good and bad, must be known.

The unintended consequences to 112(f) are not known and likely will be damaging.

The draft language of 112(f) will encourage and enable infringement because patents will become unenforceable if the inventor misses only one possible way of doing the same thing.

To compensate, specifications, drawings and claims will become huge documents of hundreds or thousands of pages making it nearly impossible to identify the true invention.

This will discourage investors from even starting due diligence due to the costs of hiring technical experts to identify potential holes.

112(f) places an undue burden, not only on inventors and investors, but also on patent examiners, trial courts and appeal courts due to size and complexity of the resulting specifications, drawings and claims.

There can be hundreds of ways to implement any given claim element. A set of claims often has dozens of elements in each of the independent and dependent claims. This means that there could be hundreds or even thousands of options detailed in the specification to cover each of the claim elements.

An inventor must imagine every possible way and explain each in detail in the specification. If even one is missed, an infringer can take advantage of the omission by creating a product that actually infringes, but can escape infringement by implementing a small change that the inventor missed.

For example, if an invention uses a hinging mechanism to hold two objects together, the inventor must identify all possible ways of constructing a hinging mechanism. That could be two door hinges, one piano hinge, steel loops passing through drilled holes, bendable metal, fabric, tape, leather, squid skin, and any other possible way of connecting two objects such that they pivot along the same line. Each must be described in detail in the specification even if that hinging motion is not the inventive concept.

If the inventor misses just one possible way, or if a hinging technology changes during the life of the patent, an infringer can copy the invention and the inventor cannot stop the infringement.

This is especially difficult for software related inventions. Software can be made to do anything because software code is made of multipurpose building blocks that can be woven together in almost infinite ways to accomplish the same thing.

But under the proposed 112(f), every possible way of coding the same thing must be disclosed in the specification. For any given thing, it is impossible to think of every way to arrange the building blocks in all 571 coding languages.

If even one is not disclosed, a hole is created that an infringer can slither through by simply rearranging the building blocks to perform the invention but avoid infringement. And if a new coding language comes out after the patent is filed, the patent will not cover it.

Code is also encrypted and compiled to machine language, which will make it impossible to determine infringement prior to filing suit and getting discovery.

Establishing an "equivalent" under 112(k) will be difficult for the courts. Each programming language has a unique set of keywords and a special syntax for organizing program instructions. The same thing coded in a different language will not appear equivalent and courts will struggle determining equivalence.

In the end nothing will change. Inventors betting their careers and sacred fortunes will be duped into disclosing their secrets to infringers under the promise of patent protection, only to be betrayed.

The effects on early stage investment will be the same. Investors do not invest in dubious assets that have no value and will not stop infringement. For this reason, a patent an uninvestible asset and this is harming early stage funding in the US. That will not change. The effects will be the same.

112(f) narrows the property lines of hundreds of thousands of issued patents effectively taking that property, which will trigger litigation under the takings clause with billions of dollars in damages.

One example is the term "inheritance" which is a common term in programming has a well-known meaning.

According to Wikipedia: "In object-oriented programming, inheritance is the mechanism of basing an object or class upon another object (prototype-based inheritance) or class (class-based inheritance), retaining similar implementation. Also defined as deriving new classes (sub classes) from existing ones (super class or base class) and forming them into a hierarchy of classes. In most class-based object-oriented languages, an object created through inheritance (a "child object") acquires all the properties and behaviors of the parent object (except: constructors, destructor, overloaded operators and friend functions of the base class)."

Inheriting attributes of a parent to a child or a child to a parent in a hierarchical structure can be accomplished in multiple ways in each computer language. There are 571 possible computer programming languages. This means that there may be thousands of ways to program inheritance that must be technically detailed in the specification.

The same is true for hundreds of other well-known functions in software development.

Even if the case law develops to allow pseudo code, which applies across programming languages, there are many different ways that each claim element can be described in pseudo code. Depending on the function, there could be hundreds of ways.

112(f) has the potential of making all inventions related to software effectively unpatentable. Since more than half of all inventions now incorporate some sort of software, this has the potential to bring great damage on our innovation engine.

A patent would be like swiss cheese with so many holes it cannot be protected, and not an investible asset.

5. There is an intense debate going on right now about what to do about the high cost of prescription drugs. One concern is that pharmaceutical companies are gaming the patent system by extending their patent terms through additional patents on minor changes to their drugs. My understanding is that the doctrine of obviousness-type double patenting is designed to prevent this very thing.

The Federal Circuit has explained that obviousness-type double patenting "is grounded in the text of the Patent Act" and specifically cited Section 101 for support.

Would the proposed changes to Section 101 and the additional provision abrogating cases establishing judicial exceptions to Section 101 do away with the doctrine of obviousness-type double patenting? If so, should the doctrine of obvious-type double patenting be codified?

The proposed changes to Section 101 do not affect obvious-type double patenting rejections in any way. This is a silly argument.

6. In its *Oil States* decision, the Supreme Court explicitly avoided answering the question of whether a patent is property for purposes of the Due Process Clause or the Takings Clause.

What are the Due Process and Takings implications of changing Section 101 and applying it retroactively to already-issued patents?

Under current Section 101 jurisprudence, patent rights have already been taken without due process. Therefore making the changes as written in 101 would correct takings and due process concerns, except for perhaps the period of time lost due to patents not being enforceable as a result of 101 exceptions.

However, there are significant due process and takings concerns in changing 112. The language of 112 will make hundreds of thousands of patents invalid. Hundreds of thousands more will be narrowed to only the precise implementation disclosed in the specification. In many cases this will be the best mode disclosed only and no other equivalents.

Narrowing the property lines is taking property no different than widening a road takes property under eminent domain. The property owner must be compensated for the loss of value.

Failure to compensate patent holders will trigger litigation with billions of dollars in damages.