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Hearing
"The State of Patent Eligibility in America: Part I"

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Chairman Tillis, Ranking Member Coons, and members of the subcommittee. Thank you for inviting me to testify before you on the status of patent eligibility. My organization, the Electronic Frontier Foundation (EFF), appreciates the opportunity to speak to what is working and what is not working in the patent system. Many of EFF's members and supporters are professional technologists and small business owners who care deeply about the patent system's impact on the landscape for innovation; unfortunately, many of the technology users most affected by the patent system are underrepresented in patent policy debates and it is EFF's hope to give them that voice here.

EFF's History in Patent Law and Policy

The Electronic Frontier Foundation is a nonprofit civil liberties organization that has worked for almost 29 years to protect consumer interests, innovation, and free expression in the digital world. Founded in 1990, EFF represents more than 31,000 dues-paying members that form the backbone that funds our work and less than five percent of our total annual funding comes from corporate sponsors.[1] Many of those members are small business owners, innovators, and tinkerers who often find themselves facing unfair patent litigation or demands. Through litigation, the legislative process, and advocacy, EFF seeks to represent those members' interests and promote a patent system that facilitates, rather than impedes, what the Constitution defines as "the Progress of Science and useful Arts."

EFF has a long history in the area of patent law and policy with a focus on maintaining its original purpose so that the public can continue to benefit from advancements in technology. In 2012, EFF launched its Defend Innovation project[2] to address the crisis America faced in its patent system as litigation and intimidation have impeded the innovation patent law was meant to promote. EFF's recommended changes to patent law come from an extensive analysis of more than 16,500 public responses to our proposals and many of those changes were reflected in our

[1] ELECTRONIC FRONTIER FOUNDATION, *2017 Annual Report*, https://www.eff.org/files/annual-report/2017/index.html.
[2] ELECTRONIC FRONTIER FOUNDATION, *Defend Innovation*, https://defendinnovation.org.

2015 white paper.[3] In order to raise awareness for Congress and the Patent Office of the abuses and failings in the system brought forth by tens of thousands of low-quality software patents, our organization began blogging on a monthly basis since July 2014 a "Stupid Patent of the Month."[4]

More recently, EFF launched the "Saved by Alice" project,[5] where EFF collects stories from startups and small businesses who were helped by the Supreme Court's *Alice Corp. v. CLS Bank* decision. Each story details how a business was threatened by a patent owner, many times a patent troll that focuses on attacking startups, that asserted a highly abstract software patent. Each story shows how the Supreme Court's *Alice* decision makes a concrete difference as many of these businesses would not have survived the high cost of patent litigation.

Historical Significance of Section 101 to Technological Advancement in the U.S.

Section 101 as written today has remained virtually intact since the Patent Act of 1793. Then, the Act stated that a patent may be granted to any person or persons who "shall allege that he or they have invented *any new and useful art, machine, manufacture or composition of matter*, or any new and useful improvement on any art, machine, manufacture or composition of matter[.]"[6] Today, Section 101 reads: "Whoever invents or discovers *any new and useful process, machine, manufacture, or composition of matter*, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title."[7]

The only change to the text was made in 1952, when Congress replaced the word "art" with "process" and provided a new definition of the latter term in a separate section. As the Supreme Court has confirmed, that textual change did not alter the substance of patent-eligibility law or patentable subject matter.[8] In other words, the criteria for patent-eligibility the 1793 Act established have remained virtually unchanged throughout our country's history. These are the criteria that have presided over and sustained our country's unparalleled record of technological innovation and economic growth over more than two centuries.

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[3] *Id.*
[4] Vera Ranieri, *Introducing EFF's Stupid Patent of the Month*, DEEPLINKS BLOG (Jul. 31, 2014), https://www.eff.org/deeplinks/2014/07/inaugural-stupid-patent-month.
[5] ELECTRONIC FRONTIER FOUNDATION, *Saved by Alice*, https://www.eff.org/alice.
[6] 1 Stat. 318, 319 § 1 (1793) (emphases added)
[7] 35 U.S.C. § 101 (emphases added)
[8] *See Diamond v. Diehr*, 450 U.S. 175, 182 (1981) ("[A] process has historically enjoyed patent protection because it was considered a form of 'art' as that term was used in the 1793 Act.").

These criteria flow from the Constitution's mandate that Congress legislate to "promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries."[9] The Supreme Court has explained that Congress is to exercise its authority to grant these exclusive rights to ensure "that '[t]he productive effort thereby fostered will have a positive effect on society through the introduction of new products and processes of manufacture into the economy, and the emanations by way of increased employment and better lives for our citizens."[10]

Section 101 is critical to ensuring the patent law fosters the productive and innovative efforts of people and businesses that the Constitution's authors expected the patent system to promote. It limits what can be patented to ensure the power that patents confer—the power to stop others from using whatever a patent claims as its invention—does not deprive the public of access to basic research tools and aspects of nature that no person could have invented. No other provision of patent law has the same purpose or effect. Any proposal to change Section 101 should come with a heavy burden to provide evidence showing the chill will not undermine the patent system's ability to sustain the same levels of technological and economic progress Section 101 as written has made possible.

Section 101's Protections are Crucial for Ensuring the Patent System Promotes More Innovation than It Deters

The state of patent-eligibility is better than ever for software startups, small businesses, technology developers, and end users—or at least better than it has been since the 1990s when the Federal Circuit gave a green light to patents on basic business methods implemented on generic computers in its *State Street Bank and Trust. v. Signature Financial Management* decision. That led to a glut of broad software patents and a dearth of prior art—*i.e.*, material that can be used to invalidate patents under other sections of the Patent Act (specifically, Sections 102 and 103), which typically consist of printed publications, including issued patents and patent applications.

[9] U.S. Constitution, Art. I, § 8, cl. 8.
[10] *Diamond v. Chakrabarty*, 447 U.S. 303, 307 (1980) (citation omitted).

Since the Supreme Court rejected software patents *twice* in the 1970s (in 1972 in *Gottschalk v. Benson* and 1978 in *Parker v. Flook*), there were few, if any, existing software patents for patent examiners to consider as invalidating prior art against the flood of applications that hit the Patent Office in the 1990s. Those problems continue to plague patent applications filed later because patent applicants can use their earliest filing date to avoid prior art that could otherwise invalidate applications they file later. Combined with the absence of Supreme Court guidance on the effect of computers connected to the Internet on questions of patent-eligibility, the result was a glut of broad patents on a practically infinite range of basic activities performed with generic computers, like methods of verifying credit card transaction information, filling out insurance application forms, and creating customized diet plans based on nutritional information and weight loss goals.

Those patents became fodder for trolls and others seeking to profit off otherwise useless patent rights by threatening companies with licensing demands far beyond the cost of proving a patent is invalid or isn't being infringed. Regardless of the merits of the case, patent owners had substantial leverage to force settlements for less than the cost of litigating a patent case through trial—which at the lowest end imaginable costs $500,000 to $1,000,000, with costs at the higher end running far beyond that.[11]

When the Supreme Court finally provided that guidance in *Alice*, it squarely rejected the notion that computers connected to the Internet could make automating basic human activities a patent-eligible invention, holding that "merely requiring generic computer implementation fails to transform [an] abstract idea into a patent-eligible invention."[12] The effects of *Alice* have been powerful and positive. It has led district courts to reject baseless lawsuits early enough to save parties from the staggering costs of discovery and trial.[13]

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[11] David E. Rogers, *Fighting Patent Trolls* (Oct. 16, 2017) https://www.swlaw.com/assets/pdf/news/2017/10/16/1013_FightingPatentTrolls_.pdf at 2 ("From a business perspective, if a company can immediately settle a troll patent infringement lawsuit for $50,000-$500,000, it may make no sense to potentially spend $2-$4 million or more to defend a patent infringement suit. That is why an estimated 87% of businesses settle troll lawsuits before trial.").

[12] *Alice Corp. Pty. v. CLS Bank Int'l*, 573 U.S. 208, 212 (2014).

[13] Banner Witcoff, *Know before you go: impact of the Alice case on software- and computer- implemented inventions in the district courts*, https://www.lexology.com/library/detail.aspx?g=72041694-bd0e-4fac-929f-cd018b05f310 (Dec. 20, 2017).

And it has lead to the invalidation of countless patents that should never have been issued and imposed far more costs on real innovators and consumers than they contributed by any measure of value to the public. Examples of patents that have fallen thanks to *Alice* include:

> Patents for providing notifications related to financial transactions, remotely supervising pharmacy functions, processing financial quotes between buyers and sellers, anonymous loan shopping, techniques for negotiating product or service upgrades, automatically determining automobile loan and lease payments, depositing pennies into a savings account based on rounding up financial transaction amounts, converting loyalty award credits from one vendor to another, and reducing interest payments on a mortgage.[14]

Yet *Alice* has hardly led to the rejection of all software patents. As practitioners report:

> It is important to note that patents in various other fields, including many software-based patents, were upheld by courts. Examples of patents that survived Section 101 challenges include those directed to sorting and displaying data objects using query dialog boxes, software for remotely controlling moveable barriers, controlling access to digital content on a data carrier using distinct memories, data types, and use rules, techniques for encoding and decoding data, remotely monitoring data associated with an Internet session, and software for designing sheet metal forming tools.[15]

In other words, the *Alice* decision is helping achieve balance by weeding out low-value patents that offer nothing that could plausibly qualify as inventive while leaving space for claims that at least arguably advances beyond the addition of well-known expedients to basic concepts.

[14] Brandon S. Bludau, Elliot C. Cook, Darren M. Jiron, *Section 101 Metrics: Post-Alice District Court Rulings on Section 101 Motions* (Sept./Oct. 2015), https://www.finnegan.com/en/insights/section-101-metrics-post-alice-district-court-rulings-on-section.html.
[15] *Id.*

That is why the *Alice* decision has only boosted our nation's global lead in the software and information, communications, and telecommunications ("ICT") industries.[16] In the two years after *Alice*, the software industry's impact since 2014 on GDP increased by 18.7%, and on jobs by 6.5%.[17] The U.S. software industry indirectly supports approximately 10.5 million jobs in this country. This does not, however, account for vast numbers of people in this country who depend on software for education, accessibility, or medical services. For these people, the cost of lowering the bar to patent-eligibility may be the loss of access to technology or services they need to survive.

Rewriting Section 101: Good for Patent Trolls and Big Companies with Massive Patent Portfolios; Bad for Small Businesses, Technology Developers, and Users

The good *Alice* has done for small companies facing baseless patent licensing demands and litigation threats is exactly why big companies, patent trolls, and patent lawyers are trying to undo *Alice*, eviscerate Section 101, and stop courts from restoring its protections ever again. The current proposal to rewrite Section 101 is a transparent attempt to do just that. EFF has reported its substantial concerns about these efforts from the release of the current draft legislation from Chairman Tillis and Ranking Member Coons.[18]

For small companies, independent developers, and makers of all kinds, the difference between winning a case early under Section 101 and trying to win on other grounds of invalidity or non-infringement at later stages cannot be overstated. Trying to win a case on any other basis requires incurring the exorbitant costs of discovery and expert witnesses on practically every issue: the meaning of a patent's claims (claim construction), written description and enablement (invalidity under Section 112), invalidity for anticipation or obviousness in view of prior art (Sections 102 and 103, respectively), and infringement. By empowering courts to reject patents

[16] *See* Makada Henry-Nickie, Kwadwo Frimpong, and Hao Sun Friday, *Trends in the Information Technology sector* (Mar. 29, 2019), BROOKINGS INSTITUTION, https://www.brookings.edu/research/trends-in-the-information-technology-sector (reporting results showing the U.S. leads the world in technology innovation due to its "business dynamism, strong institutional pillars, financing mechanisms, and vibrant innovation ecosystem").
[17] Conner Forrest, *Software industry boosts US GDP by $1.14 trillion, grows economy in all 50 states* (Sept. 27, 2017).
[18] *See* Alex Moss, *The Tillis-Coons Patent Bill Will be a Disaster for Innovation*, DEEPLINKS BLOG (Apr. 24, 2019), https://www.eff.org/deeplinks/2019/04/tillis-coons-patent-bill-will-be-disaster-innovation; *See also* Alex Moss, A *Terrible Patent Bill is On the War*, DEEPLINKS BLOG (May 29, 2019), https://www.eff.org/deeplinks/2019/05/terrible-patent-bill-way.

early in a case, before discovery or trial, *Alice* had saved countless people and small businesses from wasting money on licenses they do not need and the threat of litigation they cannot afford.

Alice has also impeded those companies with business models based only on litigation and legal threats. Historically, these companies have relied on patent assertion to force companies that cannot afford the cost of litigation—but *do* have products and customers in a competitive market—to pay to settle patent lawsuits in amounts less than the cost of litigation, yet far beyond any technological value of the patents themselves. It is not surprising that these companies are trying to dismantle 101.

Rewriting Section 101 to remove long-standing protections may benefit big businesses, patent trolls, and incumbents with massive patent portfolios, but it will disproportionately imperil startups, independent developers, customers, and end users. Losing the ability to win dismissal on the merits before discovery and trial will disproportionately hurt innovative parties Congress should want to protect. A threat of patent litigation, however meritless, will once again be able to put small companies out of business. Small businesses can't afford high-priced attorneys at the big law firms that represent perennial patent litigants like Apple, Microsoft, and Samsung. Even before cases get filed in court (or if they never do), patent owners will have a huge amount of leverage to force settlements from those without the resources to defend themselves. That will drain resources from innovation by small companies and impose barriers to entry that insulate big technology companies of today from competition that startups with the freedom to innovate could provide tomorrow.

Making early dismissal under Section 101 possible has only brought minimum levels of fairness and a playing field closer to that found in other types of litigation in patent cases by giving those who are wrongly accused a way to have their cases decided on the merits without risking their businesses or livelihoods. Congress should welcome that change, not try to undo it.

Saved by *Alice*: Real People and Businesses Section 101 Has Saved from Patent Trolls

Dismantling Section 101 will hurt real people. At EFF, we regularly hear from small businesses that have been threatened by questionable patent demands. We hear from bakeries, bike shops, trucking companies, photographers, teachers, and researchers, all of whom have been hit with demands for patent licensing payments. These people rely on software to do their jobs. They need Section 101 to save their businesses from the huge costs and risks that abstract

software patents impose. I highlight examples of this reality, EFF launched its Saved by Alice project in order to inform legislators of the real tangible benefits of the *Alice* decision today.

One example is U.S. Army veteran Justus Decher. He lives in Omaha. Following his own heart bypass surgery, Justus made more than 20 trips to his local hospital. This difficult experience inspired Justus to design a medical monitoring system that he called MyVitalz. His business focused on rural patients who need follow-up services after health scares like the one he had, but can't easily get to doctors or hospitals.

Just as he was getting his business off the ground, Justus received a patent threat in the mail from a patent licensing company called My Health. Like many such companies, My Health makes no products or services of its own, but still demanded Justus pay a $25,000 licensing fee. Its patent made a broad claim to "monitoring and treating a patient who has one or more diagnosed conditions and is located at a remote location from a treatment processing system." If that sounds mundane, that's because it is. This was not a new idea at the time of filing, and the patent doesn't even claim how a specific way of monitoring or treating patients, just the *idea* of using networked computers to do it.

My Health did not only threaten Justus: it sued at least 30 other companies for patent infringement, many of them Justus' competitors. But when a court analyzed the patent, it found it was ineligible, and therefore invalid, under Section 101, based on the Supreme Court's decision in *Alice*.[19] Justus avoided paying an outrageous licensing fee, and avoided months or years of expensive patent litigation. In his own words, Justus describes the process as: "Extortion, quite simply. They were asking me for money that they did not deserve."

Section 101 is critical for quickly weeding out patents like My Health's that don't claim anything any person could have invented—like the basic idea of using networked computers to monitor a patient's vital medical information. Regular people like Justus shouldn't have to hire an army of lawyers and experts to defend themselves. And consumers shouldn't have to bear the additional costs to pad the pockets of patent owners and their lawyers.

Another example is small business woman Ruth Taylor. A professional photographer, Ruth ran a photography website which held a weekly photo contest. This pastime was a hobby

[19] *See My Health, Inc. v. ALR Techs., Inc.*, No. 216CV00535RWSRSP, 2017 WL 6512221, at *1 (E.D. Tex. Dec. 19, 2017), *appeal dismissed*, No. 2018-1455, 2018 WL 3559236 (Fed. Cir. June 13, 2018).

that produced almost no revenue for Ruth. But that was enough for her to be sued over a patent titled "Method of Sharing Multi-Media Content Among Users in a Global Computer Network."

Once more, the patent, which dates back to an application from 2007, did not describe anything inventive. It simply took the well-known concept of a contest where an audience's vote determines the winner, and added computers connected to the Internet. Yet the patent-holder wanted Ruth to pay $50,000.

"I just thought I was dealing with a scam," Ruth later explained to us. Two days later, she was served with a complaint for patent infringement. Once more, because of today's Section 101, Ruth was able to resolve her case quickly and fairly. EFF represented Ruth pro bono, and filed a motion asking the court to dismiss the case and reject the patent under *Alice*. A few days before the hearing, the patent owner dropped its lawsuit against Ruth.

Before the *Alice* case confirmed that off-the-shelf computers do not make something inventive under Section 101, courts rarely rejected ineligible patents early in a case. People had to take on massive costs and risks to defend against wrongful infringement charges.

For example, David Bloom left his software job to found an e-commerce startup called Ordrx. He had a promising start and was able to secure venture funding. Then he was sued by a patent licensing entity. The patent in David's case described generating a menu on a handheld computing device, using "typical hardware elements."

David's company spent more than $100,000 in legal fees before the patent holder even said which of the patent's many claims it thought was being infringed. Over a two-year period, Ordrx spent as much on litigation expenses as it did on employee salaries. David cut his own salary entirely during that time. Ultimately, these litigation costs caused Ordrx to fold, and David had to lay off 40 employees. If Congress eviscerates Section 101 with this bill, there will be many more startups that face the same fate as David as opposed to Justus and Ruth.

Before Any Proposed Change to Section 101, Congress Should Study the Proposal's Effects on Innovation, the Economy, and Jobs in the U.S.

As discussed above, software patents have only proliferated since the 1990s and are still relatively new to patent law. The lack of patent protection through the formative decades of computer science and networking technology did not impede software development. To the contrary, software grew "from being a nonexistent industry to a major, flourishing, and highly

innovative industry without patent protection."[20] But when the Federal Circuit ruled that a programmed general-purpose computer could be patentable,[21] the floodgates to software patents opened. Within just a short handful of years later the Patent Office was issuing 10,000s of software patents with that number reaching 68,000 in 2013. These patents create "thickets"—areas of technology that become so crowded with patent rights, it becomes next to impossible to compete without falling within the scope of one or more patent claims—that impose barriers to entry on startups, deter innovation, and raise consumer costs. Creating *more* of these rights than ever before has the potential to do more damage than we can imagine.

EFF believes it is long past time for Congress to study the impact that patents have on software innovation, development, and industry growth, and are likely to have in the coming years as the costs of computer technology continue to fall and the potential applications expand. Unlike other areas of innovation, software is a uniquely bad fit for patent protection, which assumes that the time and costs of research and commercialization will far exceed the costs of copying. For software, that is simply not so. In fact, it is often faster and cheaper to write software code, and thus create a product, than it is to apply for a patent at the Patent Office. Because the cost of development can be so low and the ability to reach users is so great (largely because of the Internet and other networking advances), there is no that evidence patents promote more innovation than they deter in the software industry.

Software is protected under multiple legal regimes such as copyright, trademark, and trade secret protection. Given these overlapping legal regimes, there's no reason to assume software patents will advance patent law's purpose of stimulating innovation or that their benefits outweigh the costs to small business, software developers, and ordinary users. Other aspects of patent law undermine the purported benefits of software patents. For example, patent applications are supposed to enable what they claim as their invention, meaning applicants are supposed to teach those of ordinary skill in the field how to make the thing they are claiming, so that when the patent expires, anyone can practice the invention. EFF has found that software-

[20] Pamela Samuelson, *Benson Revisited: The Case Against Patent Protection for Algorithms and Other Computer Program Related Inventions*, 39 Emory L.J. 1025, 1142 (1990)

[21] *In re Alappat*, 33 F.3d 1526 (Fed. Cir. 1994); see also *State St. Bank & Trust Co. v. Signature Financial Group*, Inc., 149 F.3d 1368, 1373, 1375 (Fed. Cir. 1998) (holding that software is patentable where it "constitutes a practical application of a mathematical algorithm, formula, or calculation" that "produces 'a useful, concrete and tangible result'").

related applications enable very little in practice where the hard work and time consuming effort of developing code is left to others. In other words, the monopoly a patent owner receives exceeds her or his contribution to an invention while simultaneously stifling follow-on development. Congress should study whether government-conferred monopolies; rather than other incentive systems, such as prizes, grants, and tax subsidies; are the most effective means of promoting continued growth and innovation in the software industry and ICT sector as a whole.

While the *Alice* decision has helped, it is not enough to ensure that the software patents we have today are doing more good than harm to technological and economic advancement in this country. Such research is particularly important given that more than half of U.S. patents are being issued to non-U.S. entities.[22] There is no guarantee that draining resources from U.S. businesses to pad the pockets of foreign patent owners will benefit the vast majority of people in this country at all. Yet the record of continued growth and advancement in the software industry since *Alice* demonstrates the patent-eligibility standards we have now are working.

EFF's Additional Recommendations on Improving the Patent System

As your committee explores the status of patent law, EFF believes there are areas that are ripe for reform and would help recenter patent law to its constitutional purpose of advancing knowledge and invention. We offer the following suggestions for your consideration:

- Allow technology users and consumers to stay suits during parallel litigation against upstream suppliers.
- Make fee-shifting against plaintiffs automatic for objectively baseless patent lawsuits.
- Require transparency in court litigation of the patent's ownership, assignment, and licensing documents.
- Require patent owners to submit patent assignment agreements along with recordation at the Patent Office.
- Make methods of organizing human activity ineligible for patent protection.

[22] *See* U.S. PATENT & TRADEMARK OFFICE, https://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.htm.