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Written by **Jeff Lindsay** on March 26, 2024

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Sabotaging America's Innovation Engine

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As I arrived in China in June 2011 to help a division of a large Indonesian company with their patent strategy, I was surprised at how much China was doing to strengthen its intellectual property (IP) laws and to encourage innovation. China continued strengthening its IP laws and system year after year throughout my stay, which ended in 2020. These changes, plus many incentives and investments in innovation, advanced China's expertise in ways that have caught the West off guard.

The U.S. tendency to downplay Chinese innovation should have been firmly shaken with the October 16, 2021 *Financial Times* headline that rocked the world, especially the U.S. military: "China tests new space capability with hypersonic missile." China had just launched a nuclear-capable hypersonic rocket that circled the globe at high speed and "took US intelligence by surprise." The *Financial Times* noted that Chinese innovation in hypersonic weapons "was far more advanced" than U.S. officials had realized. This was not technology China stole from the United States, as should be obvious from a headline in *The Wall Street Journal* from September 18, 2023: "Hypersonic Missiles Are Game-Changers, and America Doesn't Have Them." After the international embarrassment China caused our military, U.S. media quickly tried to minimize the damage ("not much of a surprise" per *The New York Times*, and nothing but old Russian technology per *Foreign Policy*).

For a nation that supposedly only steals Western inventions, in industry after industry China is taking a leadership position in technology and in international patents that can't be won by copying. According to a 2023 study by the Australian Strategic Policy Institute funded by the U.S. State Department, China is now leading the world in 37 out of 44 technologies critical for economic growth and defense, areas once largely dominated by the United States.

How did China overtake the United States? As it turns out, it's not too complicated: While China continues to strengthen its IP system, we have been sabotaging our own with crippling changes both to patent law and to the government entities tasked with enforcing it.

As I began IP work in China, the IP system in the United States was about to take a terrible turn. In June 2011, the House of Representatives passed H.R. 1249 by a vote of 304-117. The Senate followed in September 2011 with an 89-9 vote, and then-President Barack Obama signed the Leahy-Smith America Invents Act (AIA) into law. Like most bad laws, it was passed in the name of doing good. This law would allegedly strengthen innovation, make America more competitive, and reduce litigation time and costs. It would also free business from the terrible burden of "patent trolls," a fearful term coined by Big Tech and often used to demonize their opponents. That term applied to many startups and lone inventors who, armed with little more than an innovative idea and the power of a patent, sometimes could resist an army of attorneys and force large companies to pay rent for using their intellectual property.

Yes, bad actors have used questionable patents to shake down businesses. But before the AIA was

passed, the U.S. patent system already offered reasonable ways to resist an improper attack on a business by a questionable patent. U.S. patents could be challenged in several ways, including *ex parte* reexamination proceedings raised by a third party but settled between the U.S. Patent and Trademark Office (USPTO) and the patent owner to determine if the scope of the patent was too broad. A more expensive *inter partes* reexamination process allowed an opponent to participate in the arguments. Further, if owners of a patent found that another patent was improperly claiming rights to their invention, they could challenge the patent in an "interference" proceeding. But the fight against "patent trolls" would follow a storyline much like what we see in extreme gun-control legislation: In the name of preventing the relatively rare abuse of a constitutionally protected right, the rights of all law-abiding citizens would be curtailed. Unusual cases would be given extensive media coverage and frequently embellished, stirring up anger and fear over patents, leading to more efforts to impair patent rights.

The Only Right Mentioned in the Constitution

The only form of rights specifically mentioned in the Constitution itself (not the later Bill of Rights) is intellectual property rights. Article 1, Section 8 tells us that "The Congress shall have Power … 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."

The constitutional duty of Congress to protect the rights of inventors to exclude others (which is what an injunction helps achieve) was not meant to disappear when Big Tech infringes. That constitutionally protected right provides the incentive inventors need to risk the expense of developing an invention. The way that right is protected by the U.S. patent system reflects the practical genius of our Founding Fathers and their understanding of incentives in a free society. By contrast, the trade guilds of Europe were created to protect the secrets of various trades so that others could not steal their knowledge and inventions, but the result of such pervasive secrecy was a harmful lack of knowledge-sharing and slow technical progress.

The U.S. patent system provides — or at least once did provide — a beautiful compromise: If inventors clearly describe how to make and use their invention in a written patent application, then the inventors are promised a legally enforceable but limited monopoly on their invention for a period of time (now typically up to 20 years from the filing date) if the invention is novel and nonobvious. Our patent system is one of the greatest inventions in history and, coupled with economic liberty, has been the engine for the rise of the American economy. The inventions it motivated or spawned have ranged from numerous aspects of transportation, electricity, and electronics to telecommunications, health and medicine, materials, computers, agriculture, and other fields that have blessed the peoples of the world. It is an engine we must not turn off, though our enemies would gladly see it fail.

Technological nightmare: China's DF-17 hypersonic glide missile system employs cutting-edge technology that the United States has yet to develop and deploy — evidence of China's rapid advance in home-grown technology. (Creative Commons)

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Ongoing Threats to Patent Rights

The AIA created new ways to take away patent rights from legitimate patent holders. First, a new tribunal within the USPTO, the Patent Trial and Appeals Board (PTAB), was created. It does not meet the requirements of a government court defined in Article III of the Constitution, but in effect creates a patent "death panel" that cripples more than 80 percent of the patents brought before the PTAB. This occurs after the USPTO has granted patent rights following a lengthy and detailed examination process. There is neither a jury nor many other safeguards our Founding Fathers wanted to protect the rights and property of citizens.

The PTAB's tragic destruction of thousands of patents is not a necessary consequence of the AIA. This depends on how the law is interpreted and who does the interpreting and the hiring of PTAB staff. The key person for oversight of the PTAB is the director of the USPTO, a position that became even more important with the AIA.

After President Obama began his second term in 2013 and before AIA went into effect on March 16, 2013, there was a vacancy at the top of the USPTO. The IP community was anxious to see whom Obama would appoint as director. A director with a history of supporting IP rights could do much to make the AIA less harmful than some feared, while someone close to the anti-patent forces in Big Tech might wreak havoc. Unfortunately, in late 2014, President Obama announced that the new director of the USPTO would be someone who did not seem to have the expected experience. It was none other than Michelle Lee, former deputy general counsel for Google and the mega-company's first head of patents and patent strategy. Her career had been rooted in Big Tech, and that influence and worldview would surely be hard to shake. Indeed, her resulting appointment of many Big Tech-friendly PTAB "judges" and the harsh approach taken by the PTAB toward many small patent holders suggest that Big Tech's perspective was well represented.

The PTAB tribunal, as implemented by Michelle Lee and as still present today, provides a revolving door in which PTAB "administrative patent judges" (APJs) can go to work in lucrative jobs for the companies they assisted. This is contrary to the lifetime appointment of real U.S. federal judges per Article III of the Constitution. Further, the PTAB does not require the ethical standards of a federal court, but instead allows APJs to handle cases where they might have a conflict of interest. One Apple attorney, for example, became an APJ, and then decided many cases involving Apple — only to go work for Apple

again after treating Apple well. Such problems are more than just bad optics; small companies face a high risk of being treated unfairly compared to powerful infringers, especially those in Big Tech. There's no limit to how many times a big company can sue an inventor before the PTAB in order to invalidate the patent, creating disastrous expenses even when patents are clearly valid. The system is stacked against inventors and small companies.

As a result, patents are more costly to acquire and less valuable once obtained. Further, a parade of disappointing Supreme Court decisions from before the advent of the PTAB seemed to reflect the steady propaganda about "patent trolls" who needed to be put down. One such case, a victory for Big Tech, *eBay Inc. v. MercExchange* (2006), weakened a fundamental aspect of patent rights, the ability to get an injunction to stop an infringer of a patent. These injunctions, which used to be routinely granted to protect patent holders, became a rarity after the eBay decision. This significantly lowered patent value.

Another painful Supreme Court decision, *Alice Corp. v. CLS Bank*, gave the USPTO tools to declare all sorts of subject matter, such as software or medical diagnostics, to be "patent ineligible" when a boiled-down summary of the invention looks relatively "abstract" — a vague word not defined in the decision. Advances in blockchain technology, for example, can be boiled down to "a method of doing business" and then declared as patent ineligible. Patent drafters now need to engage in complex, uncertain strategies to tip-toe around "abstraction" landmines in the United States.

Even the software systems used by the USPTO raise questions of decline. The USPTO has rushed to decommission the generally reliable systems that managed our nation's patent applications, instead launching a terribly expensive "Patent Center" that is riddled with bugs and defects. Despite widespread opposition by some IP experts and significant IP organizations — some providing detailed papers documenting dozens of potentially harmful and costly bugs — USPTO leaders shut down the legacy "EFS-Web" system on November 15, 2023, forcing IP workers to use the Patent Center, with new costs and risks for IP owners, inventors, and workers.

The USPTO also rushed to abandon the use of the universally reliable PDF document format, instead adopting a flawed DOCX system based on Microsoft's standard. Among the many flaws and bugs in this system is the deliberate destruction of a patent applicant's originally submitted documents. These are replaced with newly generated DOCX files in which many subtle errors may be introduced that can hurt patent-application quality and patent rights. Despite huge IP community pushback, the flawed standard went into effect January 17, 2024. A great deal of money is involved — roughly $1 billion for the Patent Center so far, about six times over budget.

In addition to the many threats and burdens that IP owners face, there is also the risk of rulers simply seizing some IP rights for political gain. For example, on December 8, 2023, President Joe Biden proposed a new policy of compelling drug companies to license patents to others if the government doesn't like the prices charged for their products. This threatens to undermine the value of numerous patents from research that received some federal assistance.

One of our nation's great experts on patents, Judge Paul Michel — a retired chief judge of the U.S. Court of Appeals, Federal Circuit — discussed the decline of patent value in the film *Innovation Race*. He said, "Patents today are worth about half what they were worth a decade ago." I worry that he was overly optimistic. For many inventors, some of these changes, especially the USPTO's PTAB, have already made their patents worthless.

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Patently dishonest: Obama's USPTO Director Michelle Lee, former general counsel for Google, turned the Patent Trial and Appeals Board (PTAB) into a mechanism for destroying patents sought by small startups and ensuring that Big Tech got the benefit. This is doubtless a major factor contributing to the unholy alliance between Big Tech and Big Government-mandated censorship. (Commerce.gov)

Getting Paid to Discover "Mistakes"

America now faces a disturbing scenario: The agency entrusted with examining and granting valid U.S. patents has incentives to rule that its patent grants were mistakes. More than 80 percent of the original patents challenged before the PTAB by would-be infringers have all or some claims canceled — a process in which the USPTO receives significant fees for the quick work of ruling against a patent by judges who may have conflicts of interest. Not all of the USPTO's decisions are tainted, but the impact on many inventors and small businesses has been disturbing and the system lacks many aspects of due process, especially for a constitutionally protected right. With such a system, innovation is at risk. Some notable inventors have been pummeled.

One inventor who lost her patent at the PTAB is Molly Metz. As a five-time world champion in the intense sport of jump rope, she developed a breakthrough design that dramatically changed the jump-rope market. She created a fascinating way of connecting the rope to the handle to maximize speed and control. Her product quickly became the gold standard across the country. Unfortunately, a major U.S. manufacturer decided to simply steal her design and send it to China for manufacturing. Unsuspecting Americans then imported the knockoff jump-rope. Faced with infringement of her patent, Metz spent years and large amounts of money to fight back, and her infringer filed a petition for an IPR (*inter partes* review) with the PTAB. As often happens, the PTAB APJs quickly decided in the infringer's favor, ruling that the carefully examined patent was somehow issued by mistake. Unlike the due process expected in a real U.S. court, the PTAB proceedings exclude the opportunity to present detailed evidence or to request a jury trial. Metz' hearing lasted about 20 minutes on Zoom, with a ruling that simply copied the wording of the infringer. The loss affected more than just her and her family — it hurt a thriving business with a unique made-in-America product.

Another noteworthy case is that of Joshua J. Malone, inventor of Bunch O Balloons, an extremely popular toy that has seen hundreds of millions of dollars in sales. His breakthrough invention can fill and automatically seal up to 35 water balloons at once, allowing 100 balloons a minute to be filled. He

left his corporate job in 2006 to be an inventor and entrepreneur, risking his home, his income, and his retirement to develop and market his idea. Sales were brisk; in fact, his product became the number-one selling outdoor toy and has over $500 million in sales. But then Malone saw pallets of a nearly identical product made in China being sold at Walmart from a corporation frequently accused of patent infringement. He also found infringing products sold in many other places, such as Home Depot, Walgreens, Target, etc. He took the infringer to court and won preliminary injunctions, multiple appeals, a jury verdict, and then a final judgment declaring his patent valid. That lengthy process should have settled the issue. Unfortunately, the AIA gives infringers multiple bites at the apple. In spite of the clear novelty of Malone's patent and the evidence of strong market success (an indicator of a nonobvious invention), the PTAB declared his patent was a mistake. An argument from the infringer about the difficulty of knowing when a balloon is full had been denounced as frivolous by a genuine Article III judge, but that frivolous argument became lethal in the hands of the PTAB.

The PTAB was supposed to simplify patent litigation, making things faster and less expensive for both patent owners and challengers. This was not the case for Malone. In the August 21, 2021 *Bloom Report*, the toy and game industry's largest source of news, Malone said:

> In my case the PTAB did not serve as a faster or less expensive alternative to district court as advertised during the 2011 debate. Rather it added over $1M in extra legal expense by duplicating and extending the district court litigation, eventually leading us to settle for a fraction of the damages. It duplicated, contradicted, and confounded the proceedings and decisions of the district court. PTAB permitted multiple petitions per patent and accepted challenges on [the] same prior art considered by the examiner and the Office of Patent Quality Assurance….

Malone's story is also featured in the film *Innovation Race*. He had the determination and the resources to keep fighting, and in the end he succeeded, in spite of the expense and lost momentum required for the long legal battle.

The patents killed at the PTAB involve many fields, including medical innovations that could save thousands of lives. One example is an invention for a new way to replace heart valves without cutting open the chest but using a catheter. Motivated in his inventive work by the death of an otherwise healthy patient who needed a valve replacement but succumbed to the surgery, Dr. Troy Norred had the wild idea of replacing an aortic valve in a beating heart using a catheter. He would go on to receive U.S. Patent No. 6,482,228, "Percutaneous Aortic Valve Replacement," in 2002. It was the fruit of years of work with frozen pig hearts, mathematical models, and other tools. But in 2003, after many major corporations and investors had rejected his invention, he was ready to give up. Then he saw his concept promoted at a trade show by Core-Valve Corp. He tried to negotiate with that company, but talks went nowhere. Core-Valve was later acquired by Medtronics. Norred tried again to negotiate, but talks stopped in 2011 as the America Invents Act was gaining momentum. Medtronics was a promoter of the bill. After the AIA became law, Medtronics sued Dr. Norred before the PTAB and invalidated 16 of his patent claims, including the three that really mattered.

Given the dismal statistics for challenged patents, the PTAB seems well designed for invalidating some apparently valuable patents, especially for startups and small companies. What can be done?

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Enter US Inventor

Some victims of the PTAB, including Malone and Metz, are working to strengthen our IP system as they speak out and educate others, including lawmakers. Malone, Metz, and hundreds of other inventors are working with a remarkable organization leading the charge to stop Congress and special interests from further damaging the U.S. patent system. The organization began with another lone inventor, Randy Landreneau, who learned how one informed person can make a difference.

To learn more about what we can do to support innovation in the United States, I turned to Landreneau, a founder with Paul Morinville of US Inventor (www.usinventor.org). US Inventor is a nonprofit group providing support to many thousands of inventors who have faced trauma in the U.S. patent system. Landreneau is passionate about the value of the patent system and its prominent role in shaping the United States and making the American dream possible for many.

Landreneau's mission is to help inventors and startups have their day in court — a real Article III court with a real judge, a jury, and due process. If only we could regain the rights intended by our Founding Fathers, the little guy could prevail more often when big companies want to take intellectual property.

An inventor himself, Landreneau was leading a group of Florida inventors when he learned of the potential harm to inventors in the pending AIA bill. He felt he had to act, so he began speaking to inventor groups to get support. The small movement he started was crushed by the media blitz for AIA, but he did help many people become aware of dangers to the U.S. patent system.

Two years later, another dangerous bill was on its way to becoming law. The House overwhelmingly passed the Innovation Act in December 2013. It sounded good — who could be against innovation? — but the law would institute the concept of "loser pays," meaning that if you sue somebody for infringing your patent and lose, you pay your opponent's legal costs. If you can't pay, then the winner could go after your investors. What lone inventor or startup could ever sue Big Tech under such a law? While trying to alert the Senate, Landreneau met Morinville, a former executive and now advocate for inventors and innovation (whom I met while in Shanghai). Morinville showed Landreneau how to walk the halls of Congress and contact elected officials and their staff to educate them about pending legislation. Every senator they met was initially in favor of the Innovation Act and had only heard Big Tech's perspective. Fortunately, the Senate voted down the bill.

The next year, the same act, only worse, was introduced again and expected to pass easily in the House, but Landreneau and Morinville reached out again to representatives and created enough awareness so that the bill never made it to the floor. Since that time, their grassroots movement has grown, and US Inventor has been able to stop every bad patent bill it has targeted. This is a classic David vs. Goliath phenomenon that teaches some important lessons: 1) one or two or a few people, armed with truth and passion, can make a difference; and 2) the United States is still a constitutional republic as long as people can freely approach their elected officials and be heard. This is a fabulous message of hope. We can speak out, be heard, and make a difference for good.*

Freedom to Innovate

One of the great lessons of history and economics is that innovation and economic growth flourish best when people have both the freedom and the motivation to create and innovate. The motivation involves property rights — the right to benefit from what is created. For those creating the future through

invention and innovation, a healthy motivation to create also requires reliable intellectual-property rights. When IP rights are eroded by vast uncertainty and never-ending challenges, innovation is hindered.

The U.S. patent system has been an engine for innovation and economic growth for more than two centuries. If one wanted to weaken the U.S. economy and hinder U.S. innovation in all areas, including areas related to national security, what better way than to weaken the incentives for innovation and the protections for innovators that the U.S. patent system is supposed to provide?

America needs to understand the importance of a sound patent system, and restore our system to once again be a powerful engine for innovation and economic growth. While the United States seems to be weakening its system, especially with respect to American inventors and companies, China has been strengthening its system and diligently creating incentives for innovation. We must not neglect the constitutional duty to provide a sound U.S. patent system, and we must ensure that the system is not corrupted to give special treatment to powerful entities at the expense of America's inventors.

China's Patent Tea Party

In spite of bad news about our U.S. patent system and the USPTO (as reported in the previous article), it's not bad news for everybody. While we can complain about how individual inventors and startups are treated, some lucky companies receive the red-carpet treatment, including those associated with the Chinese Communist Party.

Dr. Julie Burke, a noted patent expert, registered U.S. patent agent, and former USPTO examiner and USPTO quality assurance specialist, has uncovered details about how the USPTO treats patent applications filed by Chinese companies involved in technologies related to Chinese military technology. These companies arguably should be met with special scrutiny when applying for U.S. patents that could stop U.S. companies from pursuing some advanced technologies, but they seem to get special treatment. This includes companies on the Department of Defense's "List of People's Republic of China (PRC) Military Companies in Accordance With Section 1260H of the National Defense Authorization Act for Fiscal Year 2021," such as Huawei, China Electronics Technology Group Corporation, Inspur Electronic Information Industry, and China Telemobile Corp.

One company on the Department of Defense's watchlist of military companies is DJI, the Shenzhen-based company that may be leading the world in drone technology, which, of course, can have dramatic military applications. DJI also seems to have access to some sensitive U.S. technology such as Elon Musk's Starlink communication system, a sensitive technology subject to export controls. *Newsweek* has reported that DJI is selling Starlink terminals in Russia, though Musk denies it. But DJI's Russian website seems to support this claim. In any case, this Chinese company merits intense scrutiny. However, actions by the USPTO again show no such concerns. DJI has more than 1,000 granted U.S. patents, with more than 100 issued since 2023, well after the Department of Defense released its watchlist on October 6, 2022.

A thorough comparison of the treatment of Chinese companies relative to U.S. companies may be found in a 2023 study by Burke, "USPTO's Speed on Some China Patents Bears a Closer Look," published in *Law 360*. Burke considered patent applications expedited by the USPTO through the "Patent Prosecution Highway" program (PPH). Such applications contain claims similar to related applications

that have already been favorably reviewed by another participating country, and can then be expedited based on the favorable examination elsewhere.

According to Burke, Chinese patent applications have seen significantly better results (apparently more favorable treatment) than U.S.-filed applications. China had the highest percentage of granted patents (60.5 percent vs. 53.4 percent for the United States). On average, applications from U.S. entities faced longer, more challenging USPTO "office actions" with arguments and evidence against their claims. These office actions averaged more than 16 pages each, compared to just nine pages for Chinese companies, and had to cope with an average of 6.2 prior art references, compared to just 3.8 for China. Longer office actions and more cited prior art means more trouble for the patent application. China also had faster examination of its applications than the United States.

In China, the IP system has steadily grown stronger and effectively encourages innovation. While I was living in China from 2011 to 2020, local innovation and intellectual property, especially patents, were getting far more attention than anything I've seen in the United States. China is successfully pursuing a goal of moving from "made in China" to "invented in China," and part of this push includes rapidly developing a solid IP system. The Chinese system today has become world-class in many ways, and it leads the world in the number of patents filed and processed each year. This is not simply a case of junk patents being granted for PR purposes, for Chinese inventors now lead the world in filing international "PCT applications" through the World Intellectual Property Association under the Patent Cooperation Treaty. These are expensive applications that generally represent significant investment and high-quality work. Last year, Chinese entities filed 69,610 PCT applications, ahead of the 55,678 from the United States (#2 in the world) and the 48,879 from Japan (#3).

Innovation is advancing in China, while it seems to be under attack in the United States. Many of these attacks come from Chinese companies that can exploit gaps in the U.S. patent system and get away with infringing U.S. patents. A recent example, as reported at IP Watchdog on November 27, 2023, is TikTok. After failing to invalidate a small U.S. company's patent in an attack through the PTAB (some patents do survive), and then losing again in the Federal Circuit Court, TikTok is getting yet a third bite at the apple as it pursues a patent reexamination hearing at the USPTO. Providing such generous opportunities to patent infringers adds to the devastating uncertainty and costs that innovators and small companies face.

Concerns over China's actions in the world and its vigorous pursuit of technical supremacy in numerous areas should motivate further scrutiny regarding the USPTO's treatment of Chinese applicants, especially those that may pose threats to our national security. At a minimum, preferential treatment of Chinese companies, or any foreign companies, must stop. Congressional oversight is certainly needed.

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