

Inventors

FEBRUARY 2018 Volume 34 Issue 02

DIGEST

THE START-UP

**1 MILLION CUPS PROGRAM
PROVIDES SUPPORT, FEEDBACK**

**WHAT YOU NEED TO KNOW
SUCCESSFUL LAUNCHES • COMPETITIONS • RESOURCES**

Social Media and Trade Shows
HOW TO MAX OUT RESULTS AT EVENTS

Diversity in Innovation
AFRICAN-AMERICANS' IMPACT IS ENDURING

Future Impacts of Bitcoin, 'Bit-Cars'
HOW TECHNOLOGY WILL
AFFECT PATENTS, AND YOU



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Without Start-ups, We're Finished

Ronald Reagan's presidency was only halfway over. "We Are the World" was America's latest soundtrack; the blockbuster movie "Back to the Future" foreshadowed many impossible inventions that came to be. Columbia House record club was still selling new 8-track tapes, and did for three more years. (That's right—U2 on 8-track.)

It was 1985, and *Inventors Digest* was a start-up. An eight-page newsletter that was typeset using an electric typewriter, ID was conceived by Affiliated Inventors Foundation President John Farady. The first editor was Adrienne Walker, before Joanne Hayes-Rines assumed the role in 1987 and built the magazine into an enduring voice and resource for the independent inventor during her 20 years at the helm.

The start-up landscape of today—with the internet, social media, crowdfunding and technological advances that have many people tethered 24/7—is in stark contrast to that of 33 years ago. Back then, among the most important components for a successful start-up (besides a viable product or plan) were solid financial backing from the bank and strong marketing via television, radio and newspapers.

But you know the saying that begins with "The more things change ..."

In a November 2016 *Inventors Digest* cover story, Hayes-Rines recalled her early days as editor as a time of great uncertainty for small inventors and businesses, including start-ups. Pending changes in legislation that would protect the interest of corporate behemoths loomed as a threat to safeguards for the independent inventor.

Sound familiar? As you've learned in these pages in recent years, small inventors and start-ups have taken some big hits in the form of major court rulings that have eroded patent rights; a Patent Trial and Appeal Board that has routinely ruled in favor of infringers and found patent claims defective; and congressional action and inaction under the guise of productive patent reform.

Make no mistake: Start-ups are very much alive, even thriving in many respects. TV shows like "Shark Tank" have glamorized the high-stakes risk/reward factor for new businesses, especially tech start-ups. Recent data on Angel.co show 32,282 Silicon Valley start-ups with a \$5.2 million valuation and \$111,000 average salary.

But perhaps due to some of the negative factors cited above, longer-term data show troubling trends. As noted in the 1 Million Cups story in this issue, the share of companies less than a year old in the United States went from about 15 percent in 1980 to 8.1 percent in 2015—well into the current high-tech era.

Because all businesses are start-ups at some point, their role in a robust U.S. economy cannot be overstated. We hope you are enlightened and encouraged by this issue's start-ups package as we salute the entrepreneurial spirit that will be imperative for keeping them vital.

—Reid
(reid.creager@inventorsdigest.com)

INGENUITY IS AMERICA'S MOST VALUABLE RESOURCE.

DON'T TREAT IT LIKE A CHEAP COMMODITY.

Our strong patent system has kept America the leader in innovation for over 200 years. Efforts to weaken the system will undermine our inventors who rely on patents to protect their intellectual property and fund their research and development. Weaker patents means fewer ideas brought to market, fewer jobs and a weaker economy. We can't maintain our global competitive edge by detouring American innovation.

**SAVE THE
AMERICAN
INVENTOR**

TAKE ACTION AT SAVETHEINVENTOR.COM

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BRIGHT IDEAS

SmartSleep

WEARABLE SLEEP IMPROVEMENT SYSTEM

usa.philips.com

Based on multi-site clinical trials and designed for people who consistently get fewer than the recommended seven hours' sleep, SmartSleep is made to improve sleep quality.

A wearable headband, SmartSleep is uniquely designed with two small sensors that detect periods of slow wave (deep) sleep and intervene with clinically proven technology to boost it in real time. Philips' proprietary advanced sleep analysis algorithms, developed in collaboration with leading sleep experts and neurologists, produce customized audio tones that enhance the depth and duration of slow wave sleep. An accompanying app logs sleep improvement over time and provides tips on how to get the best possible night's sleep.

The device is easy to use and has no side effects. Its suggested retail price is \$399.



"It is the essence of genius to make use of the simplest ideas." —CHARLES PEGUY



Slim TWO

SMART TOILET SEAT

biobidet.com

Slim TWO offers consumers an alternative to toilet paper, and a luxury bathroom experience with customizable settings and high-end finishes.

Slim TWO includes a heated seat, heated water, stainless steel construction, a night light and more. The smart toilet seat also offers soft closing, turbo wash, a wireless remote and self-clean mode, which helps users worry less about keeping their smart toilet seat clean. All features are fully customizable, from water pressure and temperature to a wide clean mode.

The product works with any home's existing plumbing. Each Slim TWO seat comes with a 4-foot power cord to connect to an outlet as well as all other installation materials.

The retail price is unavailable. Slim TWO was being offered to Kickstarter backers for \$169 and then \$189. Delivery was to begin this month.

CarWink

DRIVING COMMUNICATION THROUGH EMOJIS

theinnovart.com/carwink/

CarWink bills itself as the world's first car device that lets you communicate with other drivers through animation.

With its hands-free voice control, the portable little gadget allows drivers to use a variety of emojis to signal different situations and express feelings to other drivers. (It can also be operated via onscreen touch input.) Just sync your CarWink device with the mobile app.

Current cartoon emojis say "Thank you," "Sorry," "Accident ahead," "I need help," "Turn on your lights," "Turn off your high beams," "Police ahead" and more. CarWink's built-in solar panel allows for passive energy harvesting and extended usage time.

The planned retail price is \$120, with an estimated June shipping date.



Mofrel 2.5D Printer

SIMULATES LEATHER AND FABRIC

mofrel.casio.jp/

It's not 3D printing, but it's very close: Mofrel creates realistic textures on paper via a new 2.5D print technology that can bring out extremely fine variations. Because the printer can create design samples without using actual materials, it renders unnecessary previously required tasks such as gathering materials, molding and sewing.

The results look and feel authentic with great detail that includes the uneven surfaces and puffiness of leather, the subtle bumps on stitches and the coarseness of embroidered fabrics (especially for kimono designs). Hard materials such as wood, stone, brick and ceramic can also be mimicked, though some of these may require additional coating for hardness or shininess.

Engadget.com says the printer costs about \$44,000 and will soon be available as a business-to-business solution. There are indications that the company is prototyping a consumer version.



Diversity in Innovation

AFRICAN-AMERICANS' IMPACT IS ENDURING **BY REID CREAGER**

Thomas Jennings didn't just defy the odds; he worked to change them. The first African-American to be granted a patent, Jennings was born in 1791 a free man during the peak of slavery on the Atlantic Coast. He amassed great wealth as a tailor in the early 1800s despite the fact that the U.S. economy was primarily agricultural during that time.

The holder of U.S. Patent No. 3306x—issued on March 3, 1821, for “dry scouring,” a process that we now call dry cleaning—may have had even greater historic impact later in his life.

Not content to sit back and enjoy the considerable fruits of his labor, he spent much of his earnings promoting abolitionist causes in the Northeast. In 1831, he became the assistant secretary for the First Annual Convention of the People of Color in Philadelphia. Years later, when his daughter Elizabeth was forced off a public bus in New York City because of the color of her skin, his wealth and influence helped her hire premier legal representation by a firm that included future President Chester Arthur. She won her case in 1855.

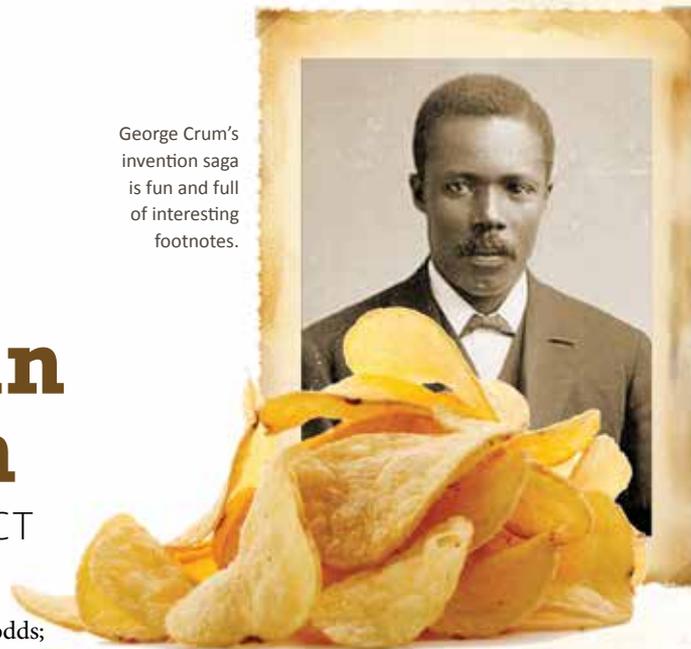
In the roughly 200 years since Jennings' landmark patent, inventions by African-Americans have been as diverse as the world he envisioned—from the potato chip to the 1-gigahertz chip. In honor of Black History Month, here's a short list of those countless innovations that have improved life and our enjoyment of it.

Potato chip (1853) George Crum

George Crum isn't nearly as well known as the potato chip, but maybe he should be. The legend starts with his name.

Born George Speck, he reportedly adopted the name Crum from his dad's racing horse ... or the name his father used as a jockey ... or maybe you prefer the version that says he took the name after a patron mistakenly called him Crum. Either way, he reasoned that “A crumb is bigger than a speck.”

George Crum's invention saga is fun and full of interesting footnotes.



A cook of Mohawk ancestry, Crum frequently cooked french fries that were a regular source of complaints from a customer (some reports say it was Cornelius Vanderbilt, a railroad mogul and regular at Moon's Lake House on Saratoga Lake in Saratoga Springs, New York). The story has it that every time Crum made another batch, the customer demanded they be cooked thinner—so the exasperated chef ultimately sliced the potatoes extremely thin, fried them to a crisp and added a lot of salt. To everyone's surprise, the “Saratoga chips” were a hit.

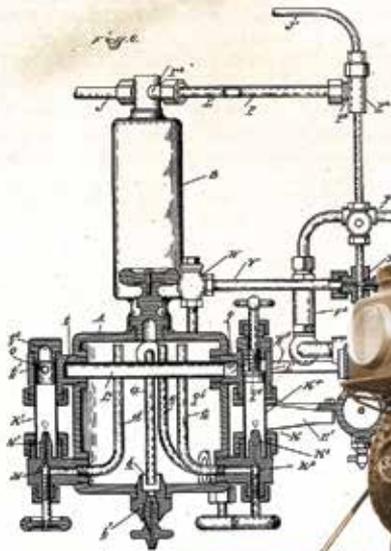
Although this tale seems widely assumed to be true and Crum is largely acknowledged as the inventor, salient footnotes abound. Crum had no patent for the potato chip; he never mentioned the potato chip in his commissioned biography; a recipe for fried potato “shavings” appeared in a U.S. cookbook as early as 1832; and some sources claim that Mrs. Catherine Wicks, Crum's sister and also a cook, was the real inventor of the Saratoga chips.

Automatic lubricator (1872) Elijah McCoy

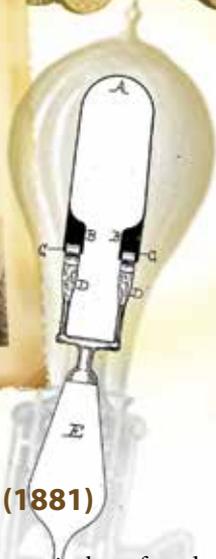
McCoy's first of 57 patents was arguably his most significant, if for nothing more than the popular saying it spawned. He developed an automatic lubricator that spread oil evenly over a train's engine while it was still moving, which allowed trains to run for long periods without stopping.

As happens frequently with a popular invention, it didn't take long before copycats of inferior quality sprang up. Railway engineers made sure to ask for “the real McCoy.”

McCoy said his greatest invention was a graphite lubricator, patented in 1916, that used powdered graphite suspended in oil to lubricate cylinders of “super-heater” train engines.



The automatic lubricator for a train engine invented by Elijah McCoy (left) was so dependable, railway engineers demanded the product that was "the real McCoy." Lewis Latimer (mid-page left), known as the inventor of the carbon filament light bulb, also had a key role in the development of the telephone.



Noteworthy inventions by African-Americans range from the potato chip to the 1-gigahertz chip.

Crop rotation (early 1900s) George Washington Carver

Hired to lead the agricultural department at the African-American Tuskegee Institute in Alabama in 1896, Carver helped revive flagging cotton production in the South by developing crop-rotation methods to improve soils that were depleted by repeated plantings of tobacco and cotton (year unknown). His teams taught farmers how to restore nitrogen by alternating plantings of peanuts, soybeans and sweet potatoes.

Born into slavery, Carver is most associated with the peanut, though it's not true that he invented peanut butter. He invented more than 300 products involving the peanut that included milk, paint, soap, cosmetics, plastics, dyes, cooking oil, printer's ink and a type of gasoline.

As Carver's department achieved national renown, he became known as a scientific expert and one of the most prominent African-Americans of his time.

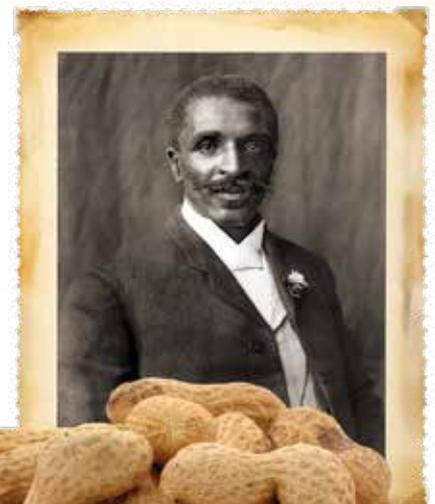
George Washington Carver is known for developing crop-rotation methods during a crucial period in Southern agriculture, as well as his hundreds of innovations involving the peanut.

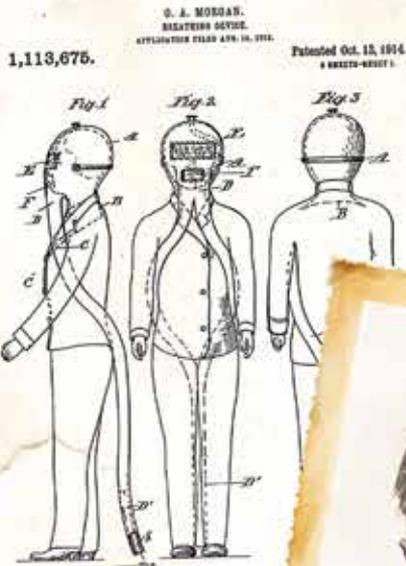
Carbon-filament bulb (1881) Lewis Latimer

Although Thomas Edison is routinely referred to as the inventor of the light bulb, electric streetlights were already in existence when he tested the bulb he's famous for in 1879. In that same spirit of improvement, Latimer's patented method for the production of carbon filaments for the incandescent light bulb was an improvement on Edison's bulb—which had a paper filament that burned out quickly.

Latimer encased the filament within a cardboard envelope, which prevented the carbon from breaking and provided a much longer life for the bulb. Before long, he was helping to install the first electric plants in New York City, Philadelphia and Montreal, and oversaw the installation of lighting in railroad stations, government building and major thoroughfares in Canada, New England and London.

Latimer, who had seven patents, also worked with Alexander Graham Bell and helped draft the patent for Bell's design of the telephone.





**Gas mask (1912)
Garrett Morgan**

Morgan's invention was a safety hood that was patented in 1912 as a breathing device, later to be known as the gas mask. The hood had two long tubes; one allowed clean incoming air, and the other let the user exhale out of the hood. The device, which became popular with police and fire departments, saved the lives of thousands of soldiers during World War I when dealing with poisonous gases.

Even the device's life-saving properties weren't enough to prevent racial obstacles—particularly in the South, where some people resisted buying his product. According to biography.com, Morgan hired a white actor to act as the inventor during presentations of his device. The inventor himself posed as a Native American man named "Big Chief Mason" who wore his hood to enter areas otherwise unsafe for breathing.

Morgan wasn't just an inventor and publisher. He was a hero. In the early hours of July 24, 1916, an explosion in a tunnel being built under Lake Erie by Cleveland Water Works trapped 32 workers. Morgan and his brother, Frank, entered the tunnel wearing the safety hood and emerged with a survivor on their back. Many of the workers, though not all, were saved.

Morgan also had patents for a hair-straightening product, a revamped sewing machine and an improved traffic signal.

**Laserphaco Probe (1988)
Patricia E. Bath**

Dr. Bath's idea was so far ahead of the technology that was then available, it needed nearly five years of research, development and trials. The laser vaporizes cataracts and lens material with a 1-millimeter insertion into the patient's eye, where a replacement lens is inserted. The probe has helped restore the sight of people who had been blinded by cataracts for up to 30 years.

In 1988, Dr. Bath became the first African-American female doctor in U.S. history to receive a patent for a medical invention. The holder of four patents, she is also the first woman to chair an ophthalmology residence program in the United States.

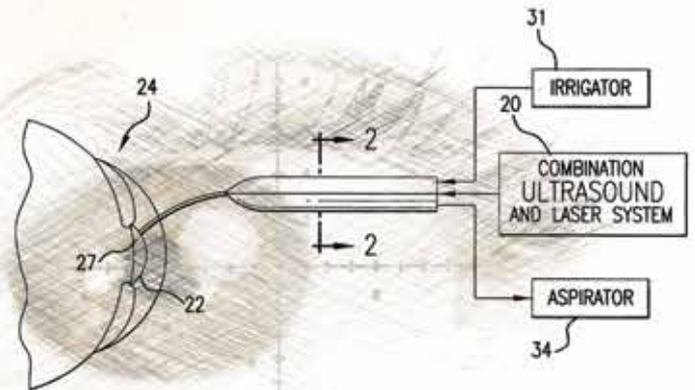
PHOTO BY NIKODEM NIJAKI

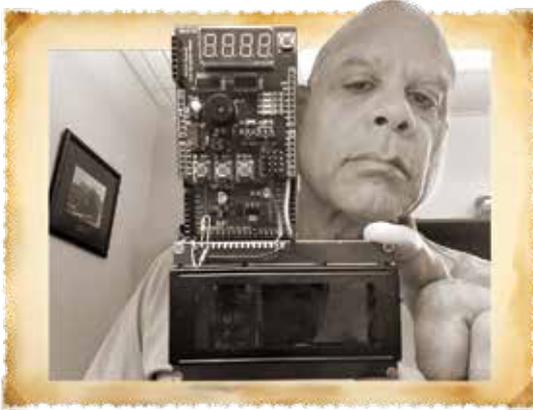


Garrett Morgan's breathing device, which evolved into the gas mask, helped him and others save workers' lives following an explosion at the Cleveland Water Works.



Patricia E. Bath's laser eye technology has helped restore the eyesight of many people left blinded by cataracts.





**1-gigahertz chip (1999)
Mark Dean**

In 1999, Dean led a team of engineers at IBM's Austin, Texas, lab to create a gigahertz chip that performs a billion calculations or cycles per second. (Some sources say it was the first such chip, although at least one other computer giant claims that distinction.)

Possibly the most accomplished living inventor you've never heard of, Dean has been an important figure in the development of the personal computer. He owns three of IBM's original nine patents; helped develop the color PC monitor; and with engineer Dennis Moeller invented the Industry Standard Architecture system bus, which allows for computer plug-ins such as disk drives and printers. ☺

INVENTOR ARCHIVES: February

FEBRUARY 11, 1973

The **National Inventors Hall of Fame** was founded on the anniversary of Thomas Edison's birth in 1847.

The hall of fame was founded by the United States Patent and Trademark Office and the National Council of Patent Law Associations, now the National Council of Intellectual Property Law Associations. The hall of fame museum is in Alexandria, Virginia.

Edison was the hall's sole inductee in 1973. Since then, its membership has grown to 547. John Fitch was the earliest-born inventor inducted (1743). Barrett Comiskey is the most recently born (1975).

Gertrude Belle Elion (1918-1999) became the first woman to be named to the National Inventors Hall of Fame in 1991. Her award-winning research at Burroughs Wellcome Co. led to the development of drugs to fight leukemia, septic shock and tissue rejection in patients undergoing kidney transplants.



A hall committee chooses an induction class each year, from nominations accepted by all sources. Last year's class was announced on Jan. 26, 2017.

Gertrude Belle Elion



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Using Social Media to Max Out a Trade Show

PUBLICIZE EARLY; POST OFTEN; USE AND MONITOR THE EVENT HASHTAG, EVEN AFTERWARD BY ELIZABETH BREEDLOVE

Consumer product trade shows offer a remarkable opportunity for inventors to show off their products to buyers, the media and sales representatives. Many major shows are included in *Inventors Digest's* 2018 list, which was published in last month's issue and is also on our website.

These days, the widespread use of social media can make your trade show experience even more lucrative—if you know how to use it the right way. Here are some tips for using social media to enhance your trade show experience before, during and after the event.

Before

- **Begin publicizing your appearance at the trade show.** This should begin several weeks beforehand, at which point you can invite interested parties to visit your booth or set up a meeting. You should post a few announcements on your social channels but also consider reaching out to your connections. LinkedIn is especially useful here. Go through those contacts, identify possible trade show attendees and begin scheduling meetings, or invite them to stop by your exhibit.
- **Start using the trade show's hashtag.** Most trade shows, conferences and other events have a specific hashtag designated for visitors to use to “tag” social media posts that are relevant to their conference. Once you identify the event's hashtag, begin to use

it in all posts about the event, especially on Twitter and Instagram. This will help get you in front of others who will be attending the show. A little name recognition can go a long way in making connections at a trade show.

- **Create your graphics, videos and other shareable content.** Many inventors and product companies choose to unveil new products at trade shows. If you fall into this category, have all social media marketing materials ready to go ahead of time. This includes graphics, videos and any other content you plan to share through social media.
- **Consider adding a new landing page to your site for event attendees.** If you want to go a step further with marketing efforts at a trade show, consider creating a landing page on your website specifically for those at the trade show and then direct all traffic there. This page should have all essential information for trade show attendees to know about your company or product, and this content should be catered specifically to those attendees. Creating this page helps provide valuable information for the people you will connect with; it also facilitates your tracking leads and other site traffic that are directly attributable to the event so that you can measure the event's return on investment. If you choose to create a specific landing page for the trade show, include a link to it on all of your social posts related to the event.



Consider creating a landing page on your website specifically for those at the trade show and then direct all traffic there. Or livestream parts of the event.

During

- **Post often, using the event's hashtag.** Once the event begins, you should increase your social media posting frequency. Posting once an hour during the event is a good rule of thumb. If you need to schedule these posts ahead of time using your social network's native scheduling capabilities, or a software such as Hootsuite or Buffer, that is acceptable and may even free up time for you to spend networking. Always use the event's hashtags so that other people attending the trade show will see your posts.
- **Use your social networks to share your trade show experience.** At a minimum, take pictures or videos with a smartphone and blast them out via your social networks. If you're looking to make a deeper connection with your followers, though, consider livestreaming parts of the event using Facebook Live or Instagram Live. Even a five-minute livestream showing off your booth can make a big difference.
- **Closely monitor your notifications and the event hashtag.** This way, you can respond to any questions you get and interact with others in attendance. Consider having someone back at your office handle this so that you can focus on being present at the trade show and networking face-to-face.

After

- **Post any recaps to social media.** If you choose to write a blog post for your site recapping the event,

share it on your social media profiles. This also provides another opportunity for you to connect with anyone who may have been at the event.

- **Continue to use and monitor the hashtag for a week or so.** Typically, people continue to use an event's hashtag for several days after the event ends. Just because the trade show has ended does not mean your opportunity to connect with buyers, the media or others is over. Look for opportunities to respond to others' posts and build up your network that way.
- **Connect online with anyone you met offline.** Once settled in back at the office, take some time to go through business cards or other materials that you collected at the trade show and make connections with those people online. Follow any relevant people or companies on Twitter, "like" their page on Facebook or connect with them on LinkedIn. Social media makes it easy to stay in touch with people all over the world, so take advantage of this opportunity soon after the show. 📧

Elizabeth Breedlove is content marketing manager at Enventys Partners, a product development, crowdfunding and inbound marketing agency. She has helped start-ups and small businesses launch new products and inventions via social media, blogging, email marketing and more.



Airplane Pillow Takes a Load Off

JETCOMFY USES ARMREST, NOT YOUR SPINE, TO SUPPORT YOUR HEAD'S WEIGHT BY EDITH G. TOLCHIN

I have manufactured products for about 40 years. Product safety is my business model. When I interview inventors of new products, my first question is almost always, "Is this product safe?"

According to the Federal Aviation Administration, "In nonfatal accidents, in-flight turbulence is the leading cause of injuries to airline passengers and flight attendants..."

Here is a new product made for much-needed comfort during air travel, so I naturally brought up the safety-during-turbulence issue with co-inventors Ephi Zlotnitsky and David Brecht.

Edith G. Tolchin (EGT): Who is the actual inventor of JetComfy? If it's a joint effort, what are your backgrounds?

Ephi Zlotnitsky (EZ): It's a joint effort. I'm a serial entrepreneur, a builder and a designer. Dave Brecht is an engineer with a few inventions under his belt.

EGT: How did the JetComfy come about?

EZ: Dave and I met by chance while vacationing. Our conversation led to airplane comfort or the lack thereof, as well as the fact that the U-shaped pillows that are being sold for air travel effectively do not provide any kind of support. It's the same U-shaped pillow that has not really changed in over 40 years.

EGT: How many prototypes did you create before you arrived at the "perfect one"?

EZ: We created probably about four or five prototypes while traveling over 1.3 million air miles. We are still improving the design, and we aim to create a better, user-friendly product.

EGT: If the product hooks on to the armrest, what happens if a passenger wants to raise the arm rest but your product is hooked on to it?

EZ: The user can always switch to the other armrest. JetComfy is easily attached and detached. The JetComfy

The product's aim is to mimic a natural head-on-hand resting pose, with a pad that tilts in toward the user.



“Our goal was to mimic the natural resting pose of resting your head on your hand. We made improvements to this pose by using a 2-inch memory foam on the pad, and gave it adjustable height, tilt and swivel.” — EPHI ZLOTNITSKY



takes up only a very tiny portion of the armrest, leaving it available for your neighbor to still use. On the other hand, if you didn't have a JetComfy, you would be resting your arm on the shared armrest—which takes up much more space! If you are in a window or aisle seat, you can use the non-shared armrest as well.

EGT: Is JetComfy patented?

EZ: It is patented. We had a legal team and engineers that went through the patent details to make sure we get the most protection. We are manufacturing both overseas and in the United States.

EGT: If the seats are narrow, as with many budget airlines, wouldn't the pillow on top cause the passenger using it while seated in a center seat to lean left or right, towards the adjacent seats? That's what it looked like in a recent product photo I saw.

EZ: The product is designed to tilt in, towards the user. It is designed not to encroach on the space of the passenger seated next to the user.

EGT: Is the product safety tested? Isn't there a potential of neck injuries with flight turbulence? Have the airlines (not the Transportation Security Administration) approved the use of this product?

EZ: The product is a travel pillow. In order to avoid injuries, we recommend that users adhere to the flight crew's instructions and use common sense and caution if the plane is going through violent turbulence.

(One FAQ on the JetComfy website asks, “Is JetComfy TSA approved?” The site says: “The TSA does not approve specific carry-on items, but JetComfy conforms to all 2016 TSA guidelines. We have personally taken JetComfy through over 100 checkpoints around the world so be assured it is airline-friendly.”)

EGT: Are there any other special features?

EZ: No other pillow on the market takes the weight off your head and your spine. They are all just “wedges” to stick under your neck. JetComfy actually takes 10-15 lbs. of weight off your spine and uses the armrest to support it. It has been proven that relieving

weight from your spine while sleeping reduces fatigue and neck stiffness.

My wife suffers from sleep disorders and was never able to sleep on a plane until we invented the JetComfy pillow. This alone was proof that it should be brought to market.

Our goal was to mimic the natural resting pose of resting your head on your hand. We made improvements to this pose by using a 2-inch memory foam on the pad, and gave it adjustable height, tilt and swivel.

EGT: Aside from Amazon and via your website, are you selling anywhere else?

EZ: In airports around the U.S. and the world.

EGT: What are your sales forecasts or further product plans?

EZ: We are in the process of opening our own point-of-sale comfort centers in selected airports and have been receiving tremendous response from all over the world. At this rate, we are anticipating our sales to grow in triple-digit percentages.

EGT: Any plans to add to your product line?

EZ: We have a few new ideas, and we will keep pushing to develop comfort products that actually work.

EGT: Do you have any words of wisdom or guidance to offer our readers, many of whom are novice inventors?

EZ: Test it, test it ... and don't fall in love with your own ideas. 🍷

Details: info@jetcomfy.com

Books by **Edie Tolchin** (egt@edietolchin.com) include “Fanny on Fire” (fannyonfire.com) and “Secrets of Successful Inventing.” She has written for *Inventors Digest* since 2000. Edie has owned EGT Global Trading since 1997, assisting inventors with product safety issues and China manufacturing.





ENERGY AND HOPE, CAFFEINATED

NATIONAL 1 MILLION CUPS PROGRAM GIVES KEY SUPPORT, FEEDBACK AMID HARD TIMES FOR START-UPS **BY REID CREAGER**

Anyone who has seen “Shark Tank,” or shows of its ilk, knows this is an exciting time for start-ups. There are also many challenges.

- Even though unemployment has fallen and the stock market has been generally robust of late, the latest data from the Census Bureau last September showed the number of new businesses is increasing at a much slower pace than before the recession of 2008. A total of 414,000 businesses were formed in 2015 (the most recent year surveyed), which was a slight increase from the previous year but far off the 558,000 new companies reported in 2006.
- The share of companies less than a year old in the United States went from about 15 percent in 1980 to 8.1 percent in 2015.

1 Million Cups is addressing this in an exciting and hands-on way, while providing start-ups a true sense of relatability with others and a spirit of community. Self-described as a free national event designed to educate, engage and connect entrepreneurs, the program is an opportunity for start-ups to get crucial feedback from

others in the same boat. Each week, two local entrepreneurs get a chance to present their start-ups to a diverse audience of entrepreneurs, mentors, advisers and even civic leaders via a six-minute educational presentation, followed by 20 minutes of feedback and questions.

The coffee is free, the experience priceless. “Presenters often share how valuable it is to receive feedback on their business,” says Jordan Marsillo, 1 Million Cups program associate for the Ewing Marion Kauffman Foundation, which developed the event in 2012. “Not only are they getting insights, suggestions and knowledge, they are also able to engage in a real dialogue to maximize their time with the community. Building and strengthening relationships within the community is another added benefit.”

‘Great questions, energy’

The new 1 Million Cups location for the Irvine, California, chapter is ironically located in the first floor of the so-called Starbucks building on California Avenue. Erik Melander, who presented for BerryCart—a mobile

PHOTOS COURTESY OF KAUFFMAN FOUNDATION



app used for discovering deals on all-natural foods—said in a 2104 YouTube video that “it was a great crowd of people. Everybody was engaged. They asked a lot of great questions, a very helpful crowd.”

“It’s a great energy. You can tell people are here to help.”

The Irvine location is among the more than 160 cities with 1 Million Cups chapters throughout the United States as of early 2018. Marsillo says that during the past five-plus years, 1 Million Cups “has adapted to the needs of the communities offering the program, as well as to what is happening in the field of entrepreneurship. The largest changes have been to keep up with the demand and scale of the program.”

Meeting the needs of the respective communities has been a key to the event’s success. “When the program began, it was being used as a way to learn more about what was happening with entrepreneurs in our backyard,” Marsillo says. “Because learning was the focal point, entrepreneurs were being asked, ‘What can we, as a community, do to help you?’ and that is still true today.

“1MC has always been about helping those who are starting or building something new, succeed. The program started in Kansas City at the Kauffman Foundation by a small team of Kauffman Associates, although we quickly learned that in order to truly help entrepreneurs, we needed to get the community involved. We invited the community to join the sessions and to eventually lead the programs. Today, we have more than 800 volunteer community organizers across the country leading 1MCs at the local level.”

Finding solutions

Although the atmosphere at a 1MC event is generally supportive, participants get the most out of it when they are receptive to alternative solutions. As one participant said: “It’s not just about finding all your good things. It’s like, ‘What’s getting in your way? What do you really need?’”

Code for America, a nonprofit collaborating with local governments to foster and facilitate innovation, makes a presentation. Jordan Marsillo (inset), 1 Million Cups program associate for the Ewing Marion Kauffman Foundation, says participants benefit from building relationships within the community.



The coffee is free, the experience priceless.

Top: Open dialogue, collaboration and interaction are hallmarks of the national 1 Million Cups program, which had chapters in more than 160 cities as of early 2018. Above left: A presenter from the Oddly Correct coffeehouse in Kansas City, Missouri; at right, an audience member asks a question.

In that spirit of maxing out results, people applying to present at 1 Million Cups are instructed to watch a series of Kauffman Founders School videos, which provide important information for people starting a business. This helps possible presenters prepare to present and address the most salient aspects when they address the audience.

The program is attuned to the increasing role of social media in all businesses, not just start-ups: “As part of joining the 1Mcnation, we provide a Twitter handle to each community as a first stepping stone for marketing and engagement,” Marsillo says. “Many communities build upon that and create Facebook and Instagram pages to further promote, engage and champion their programs.”

1 Million Cups is dedicated to helping start-ups navigate their many challenges. Some speculate that

big companies have hurt entrepreneurship by making it easier for incumbent businesses to kill off challengers—or swallow them before they become a serious threat.

Marsillo identifies “the big three” hurdles for start-ups—“access to capital; access to talent; access to networks. Primarily, 1MC reduces the barrier of access to networks, but it has also helped some entrepreneurs secure funding (outside of the event) through connections or presentation practice.

“There have also been cases where entrepreneurs have found their co-founders or first employees via 1MC. As many of the companies that present at 1MC are 0 to 2 years old, we often see entrepreneurs searching to nail down their product-market fit and hone their target audience.” ☑

Details: 1millioncups.com

CASE STUDY:

2-Phase Targeted Marketing a Blockbuster Hit Through Facebook

How does a fashion start-up get consumers to buy a product that technically doesn't yet exist, that people can't even try on?

Antonia Saint New York combined with digital marketing agency Eventys Partners to run a pre-launch and launch campaign for its line of high-tech women's shoes that was so successful, it became the first case study Facebook has done on a crowdfunding campaign. The July 6-August 27 campaign last year achieved a sevenfold return on ad spending as well as 1,796 conversions (with sales tracked directly from Facebook).

Antonia Saint New York is a line of women's heels and flats made to feel like sneakers on the inside. Ashley Isaacs, a paid media account manager at Eventys Partners, was in charge of the Facebook advertising for the Kickstarter and Indiegogo campaign, created and ran the ads, and kept up with the numbers.

She said the campaign was set up in two phases. The first phase sought to collect potential customers' information before the official campaign launched.

As Facebook's study reported, a variety of link, lead and video ads directed people to the Antonia Saint New York Kickstarter page to pre-order the high heels. The ads emphasized the high-tech comfort line of shoes for women and were targeted to different core audiences, including women in major cities around the world interested in shoes, fashion and Kickstarter campaigns. The team also targeted a custom audience of women who supported a similar crowdsourcing campaign in the past and a lookalike audience based on this custom audience.

Phase 2 was re-targeted to people who visited the company's website or Facebook Page or shared their contact information but had not yet pre-ordered shoes, as well as people who engaged with the Canvas and video ads. Then, as the campaign progressed, ASNY began running ads on Instagram and Audience Network to reach a wider audience and stay at the top of potential buyers's minds without oversaturating their Facebook News Feed.

"This was the first campaign where we had done this," said Isaacs, who talked frequently with ASNY CEO Antonia Saint Dunbar throughout the campaign about ads and updates. "They were an awesome company to work with. It was a lot of fun to continue to try new ads and different kinds of things within Facebook to see what was working."

Saint Dunbar was thrilled with the results: "We brought to market a new, innovative product with a unique and disruptive value proposition, and educated women on what was wrong with the current products. We communicated this message so effectively with Facebook that we exceeded our funding goal by 3,690 percent! Within 40 days, we raised over \$1.8 million in pre-orders, and found 7,000 customers from around the world."

—Reid Creager

Antonia Saint Dunbar is CEO of Antonia Saint New York. The company's pre-launch and launch campaign for its line of high-tech women's shoes was so successful, it became the first case study Facebook has done on a crowdfunding campaign.





FIRST CONSIDERATIONS

TO SUCCEED, YOUR PROJECT WILL NEED
THREE ESSENTIAL SKILLS **BY JACK LANDER**

How many inventors does it take to make a start-up? The correct answer is one. Just one.

A start-up needs three essential skills: the authority on the purpose and technical aspects of the invention, (the inventor); the marketing director; and the finance director. For an effective start-up, one warm body is not enough, and four are too many.

Generally, these three skills are found in three separate persons. It may be comforting to have your best friend, who is skilled in neither marketing nor finance, join you in creating a start-up. But this would mean that he or she would have to take on the tasks and discipline of marketing or of finance, or both, without the needed experience or expertise. And if your intended partner is also an inventor, on-the-job training tends to be a disaster. The inventor mind is generally not inclined to execute tasks having well-established procedures that must be followed if time-consuming and expensive mistakes are to be avoided.

Consider how venture capital finance groups approve or reject start-up proposals. They evaluate the team first and the product second. If the start-up

does not have the three essential positions—marketing, finance and engineering, filled by persons who have performed in these positions before—they won't bother to spend time evaluating the invention or product. Some VCs will reject proposals if the team hasn't had a significant prior venture failure. In short, they want the assurance of competence and realism about the odds of failing, as well as the odds of succeeding.

By the way, VCs don't want the typical inventions of independent inventors, even though we are sure that we will sell millions of our latest creation. They are looking for early-stage Googles, Amazons and Teslas, the next medical scanning machine, etc.

I would love to tell you that the pioneering spirit of American entrepreneurship encourages the loner to strike out and damn the torpedoes, go full speed ahead, defeating all problems without much help from others. But this is not how start-ups succeed today, if they ever did. It's human nature to want to hold all of the equity in your venture, but 51 percent of a successful venture is infinitely better than 100 percent of a flop.



Venture capital finance groups evaluate not just the invention, but marketing and financing skills.

‘Ready, fire, aim’

Let’s think first about marketing. What is it?

- It is the inspiration and research that identifies an opportunity for a new or revised product or service.
- It is broadly defining the product that will satisfy such opportunity.
- And it is the selecting or creating of the channels through which the eventual product will get into the hands of the consumer.

On that first point: Inventors are inclined to invent whatever product of their subconscious mind. Less often it might be an annoyance, or need for which no common solution appears to exist, etc. The independent inventor’s thought process was once described to me this way by Louis Foreman, *Inventors Digest*’s publisher and a major player in IP circles as the founder and CEO of Enventys Partners: “Ready, fire, aim.”

In other words, invent, make a prototype, do a patent search, and then find out whether there is a market for the invention. The marketing personality is inclined to reorder that sequence into, “Aim, ready, fire.” Why invest time and money until you have assurance that

your eventual product will have a market—and not a market that you will have to create, but an identifiable market that is hungry and waiting to be fulfilled through market channels that already exist!

Marketing also involves selling, or inspiring customers to buy. But selling is the more routine part of the marketing job. The three points above are why a marketing director is paid the big bucks.

Thomas Edison had a staff of technicians who developed the details of his inventions. He defined what the market would want; invented the product in a broad form; and delegated most of the research and development, which allowed him time to assure he would have a market when the product was ready. He was a marketer more than a hands-on inventor, although he loved and pushed his image as the genius inventor who had perfected every detail of his inventions.

What real financing is

And what is finance? Do not think this means getting approved for a line of credit from the bank. That’s a



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Social media could result in suitable partners; LinkedIn is most promising. Present yourself as a new-product developer, not an inventor.

myth that many inventors discover only after maxing out their credit cards.

The Small Business Administration *will back the loan a bank will make*, but you first must convince the bank that your product is selling, the trend of sales is upward, and your profit margin is sufficient to assure you will repay the loan. The bank stands to lose a significant part of its loan if you can't repay it. Banks are not in the business of taking a risk on the promise of a product. In fact, banks don't like risk at all.

What?!! You mean I have to be in production, and successfully marketing my product, before I can borrow from a bank? You betcha. Even then, it's not going to be a cakewalk. Early finance is very difficult to get because the history of its repayment is largely that of default on loans and investments.

This is why we have "angel" financing. But angels are generally experienced start-up entrepreneurs, and very cautious ones. They think more like venture capital fellows than optimistic product developers. You have to convince the angel that your product has a market, and that you have the three essential skills covered. That isn't easy. On the bright side, angels accept failure as the price for finding the goose that lays golden eggs. One solid success can pay for two or three failures, and still return an enviable profit.

The partner search

How does an inventor find the skilled partners he or she needs? One way is to reach entrepreneurial students in universities. If the school has a newspaper in which you can advertise, that may smoke out

TOP RESOURCES FOR START-UPS

an aspiring Bill Gates prototype. You're taking a big chance on partnering with people who haven't proved their skills in the real world.

But then, you are in the same untested position. And some of the most successful ventures were pulled off by impatient students who struck out before graduating from college. Eagerness sometimes compensates for experience. This is a desperation approach, only recommended if there is no chance for a more mature arrangement.

Social media could also result in suitable partners; LinkedIn is the most promising. However, your profile as an inventor will often be a turn-off to serious marketing and finance people. Inventors are often thought of as impractical dreamers. Present yourself as a new-product developer, not as an inventor.

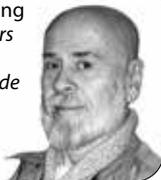
The problem with that tagline is that you probably don't have any history of successful new products. Don't lie or exaggerate. Your posture could be as a specialist in developing products that fill a gap, but your need is for a creative marketing type to *define* the gap. Remember, market gap discovery is a marketing responsibility; inventing the detailed solution is yours. Aim, ready, fire.

Of course, you probably want to push the inventions you have worked on, or at least recorded unrefined in your journal. Once you have established connections and gotten to know your partners, then propose your inventions for discussion. You might have a winner.

A caution: Rivalry, jealousy and impatience can ruin partner relationships, and are more the cause of break-ups and failure than disagreements about technical matters. Be clear on who will do what, and put it down in writing. Be slow to criticize and slower to anger. A partnership is often like a marriage from hell without a hug or a kiss goodnight. I've been involved in both types.

Modern Homo sapiens (wise and knowing man) has been around for 100,000 years. Homo habilis, Homo erectus and Homo neanderthalis all suffered extinction. Homo sapiens, the only surviving species of humankind, succeeded because of specialized skills and tribal cooperation. It's in our DNA. 🧠

Jack Lander, a near legend in the inventing community, has been writing for *Inventors Digest* for 21 years. His latest book is *Marketing Your Invention—A Complete Guide to Licensing, Producing and Selling Your Invention*. You can reach him at jack@inventor-mentor.com.



Global Accelerator Network

(gan.co) is made up of more than 70 accelerators across six continents and 100 cities. Among the benefits: access to best practices, industry data, discounts and perks, consulting, investors, peers and mentors.

Startup Grind

(startupgrind.com) is another hotbed of resources that includes events and partnerships with Google for Entrepreneurs.

Userinput

(userinput.io) gives honest feedback on whether your idea, website or app has true business potential.

Coursera

(coursera.org) connects you to the world's universities and their best online courses. Specialties available include machine learning, Python and data science.

Rocket Lawyer

(rocketlawyer.com), funded by a group of investors that includes Google Ventures, is a website with free legal documents and advice. You can incorporate your business in minutes as Rocket Lawyer files your work.

Markify

(markify.com) is a website that searches and watches trademarks. You can search for new and similar domain names.

Startup Stash

(startupstash.com) is a curated directory of resources and tools to help you build your start-up.

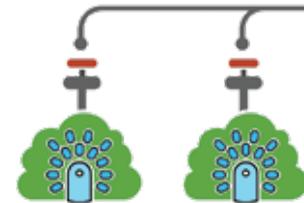
SCORE

(score.org), "Counselors to America's Small Business," is a Small Business Administration resource partner dedicated to entrepreneur education.—From online reports





SAVING WATER? SMART



GREENIQ IRRIGATION CONTROL SYSTEM
HELPS PROTECT A PRECIOUS RESOURCE **BY JEREMY LOSAW**

Although the common narrative of the American Dream is a two-story house and picket fence, our lawns get much of our attention.

Collectively, Americans obsessed with growing beautiful lawns expend an enormous amount of time and money to maintain them—which comes at a cost in terms of natural resources: Up to 60 percent of residential water use is for outside purposes, and about half of that is wasted, according to the Environmental Protection Agency.

Odi Dahan is working to change that. He has developed a product called GreenIQ that is helping to make lawn and garden irrigation smarter and more efficient.

Rainy-day inspiration

GreenIQ is a smart garden hub and irrigation control system that directs residential sprinkler valves. It replaces the existing sprinkler control panel and adds network connectivity for greater control of watering cycles. The system ties into local weather forecasts and smart garden sensors to ensure that lawns and gardens are only watered when necessary.

The GreenIQ app provides even greater control and allows users to schedule or remotely trigger their sprinklers. The EPA-certified system allows users to save approximately 50 percent on their water bill and prevents water from being wasted. The GreenIQ system is available from major retailers for \$249.

Dahan had a long career in electronics and cellular technology before launching his start-up. He began his career at Motorola in Israel before spending an additional 10 years at Freescale Electronics (now NXP), where he specialized in wireless communications and was a senior member of the technical team.

He was always interested in starting his own company and developing something that solved a real problem. One cold and rainy day while indoors, he heard the lawn sprinklers come on. He had no desire to go out in

the storm to shut off the sprinklers and lamented the wasted water.

He started looking around for an app for sprinkler control and found nothing, so he decided to build an IoT-enabled sprinkler controller himself. “[My wife] reminded me that on our first date ... I told her that one day I would become an entrepreneur and that time has come,” Dahan said.

Mastering the prototype

Dahan was so bullish on the idea that he left his job soon after his initial vision, enabling him to devote all of his time and energy to the project. The first task was to build a prototype.

Despite spending more than two decades in the electronics field—and being co-inventor or sole inventor on 13 patents dating to 2005—he was a little nervous about his programming skills. “After being a senior R&D manager for so many years, I had this fear that I maybe I am not qualified anymore for writing code,” he said.

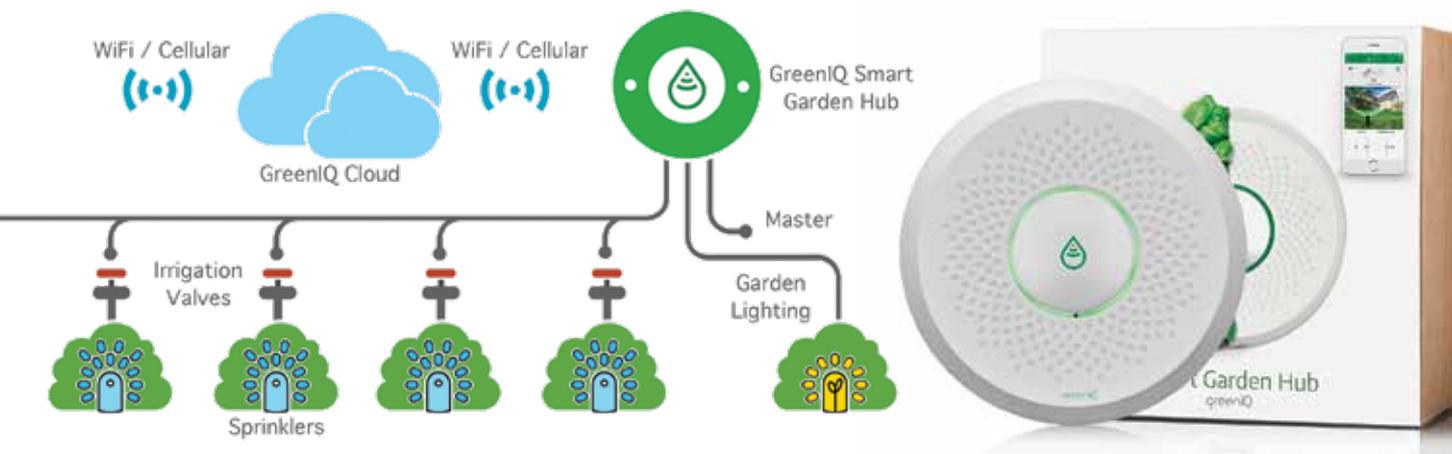
Fortunately, he still had the touch. He chose to use common developer boards such as the Raspberry Pi microcontroller as the backbone of the system and used relays to drive the valves. He had a fully functioning prototype in about four months.

The next step was to build multiple units to test the efficacy of the device in many different environments. He worked with an American company to make molds for the electronics housing, making a small run of 100 units. He turned his home office into an assembly area and built them all himself.

After getting some PR from a local news station, he was able to sell all of the first batch and gained some valuable insights. “From time to time, I also had to leave home and do installations for some people because it was a little bit difficult for them to install in the beginning. ...When you are doing an installation in someone else’s home, you get a lot of insights of how the system should [function],” Dahan said.

Odi Dahan's idea originated on a cold and rainy day, when he was reluctant to go outside and turn off his sprinklers.





The EPA-certified system allows users to save approximately 50 percent on their water bill and prevents water from being wasted.

Competition a turning point

After working on the system for about a year, he decided to leverage Israel's vibrant start-up culture and enter a competition called the Most Promising Start-up of 2014. To his surprise, he won. It was great press for him and helped him land his first round of funding. He was contacted by an investor an hour after the competition, and they eventually formed a partnership.

As GreenIQ evolved, he needed to find a manufacturing partner. Fortunately, a factory across the street from his office was capable of making the product, which allowed him to quickly build the next generation of it. The second generation maintained the Raspberry Pi control board to allow maximum system flexibility without having to make custom circuitry. Once the design stabilized, he invested in custom PCBs (a kind of industrial product and/or chemical) that are the backbone for the third-generation version of the product.

Dahan and the GreenIQ team have not filed for patents. He feels that the value of the system is in the

proprietary algorithms that process data in the cloud and less so in the device itself. However, he is planning on filing patents in the near future.

GreenIQ has experienced major growth since its beginnings in 2013. Dahan now has 16 employees in his Israeli office. The product—which has wide distribution in Europe and is also available in major retail outlets that include Home Depot in the United States—was recently awarded EPA WaterSense certification, which allows owners of the system to get rebates on the purchase in some areas. He has also formed a strategic partnership with German power tool manufacturer Stihl in order to work together on future smart garden technologies. 📍

GreenIQ directs residential sprinkler valves. It replaces the existing sprinkler control panel and adds network connectivity for greater control of watering cycles. The GreenIQ app provides even greater control and allows users to schedule or remotely trigger their sprinklers.

Jeremy Losaw is a freelance writer and engineering manager for Enventys. He was the 1994 Searles Middle School Geography Bee Champion. He blogs at blog.edisonnation.com/category/prototyping/.



U.S. START-UP COMPETITIONS

Winning an Israeli start-up competition in 2014 helped Odi Dahan land his first round of funding and form a partnership. Here are some U.S. events that offer start-ups a host of opportunities in terms of motivation, education, financial support and exposure.

Startup World Cup: \$1 million grand investment prize. startupworldcup.io.

G-Startup Worldwide: Regional competitions; Global Final Competition grand prize winner gets \$250,000 investment. g-startup.com/

PITCH: The Battle of the Startups: Open to startups exhibiting that have received under \$3 million in funding to date and have not had a discernible change in business model in the previous three years. collisionconf.com/startups/pitch

HATCH: Pitch competition for tech start-ups. hatchpitch.com/#applications-open

U.Pitch Competition & Showcase: Elevator pitch competition for students. Prize pool of \$10,000. futurefounders.com/contact/

TechCrunch Disrupt Startup Battlefield Competition: Winner gets \$50,000 prize. techcrunch.com/event-info/disrupt-sf-2018/

SXSW Accelerator Startup Competition: Company pitches. sxsww.com/apply-to-participate/sxsw-accelerator/

For some competitions limited to specific locations or ethnic/cultural groups: gusto.com/framework/business-basics/the-ultimate-list-of-startup-competitions-hackathons-more/



DRIVEN by a GREEN HEARTBEAT



NATURAL FIRST-AID SALVE REFLECTS FAMILY'S PASSION **BY DON DEBLAK**

Many start-ups have a defining moment or turning point at which their entrepreneurial mission gains lasting momentum. But for the Scott family, success has resulted from a steady, collective heartbeat that drives a passion and natural synergy.

Jen and Jodi Scott have been best friends since they were little. “Jen graduated high school early to come to college with me,” Jodi says. “We’ve always been earthy, green and health conscious.”

So in Jodi’s words, “it isn’t ironic” that they are now leading a health-oriented, women-owned, family-operated business. Yet the family does marvel at some of the circumstances that helped Green Goo formulas combine “timeless homeopathic herbal wisdom with natural ingredients to produce Food for Your Skin™,” as its website says. “We are Rethinking First Aid™ and Body Care Products. No bad stuff. No sneaky stuff. Does not contain aluminum, Propanediol, or artificial ingredients.”

A formula evolves

Jen Scott developed an interest in being an herbalist in 1995 as she entered Texas State University in San Marcos, about 30 miles south of Austin. She went on to attend Blue Otter School of Herbal Medicine and got her degree in biology and geography. Her sister, who is a year older, got her degrees in psychology and biology.

“We worked in health food stores in the Austin area,” Jodi recalls. “It was a very progressive area for the health food industry then.” They learned how to utilize plants into salves around 2010. Jodi went on to get a Master of Science degree in health psychology and specialized in neuropsychology, and then went pre-med.

When Jodi was in grad school, her sister went to herb school and became a midwife. While getting her midwifery license, she met a woman who had been making herbal products. An herbologist, “Nan Khoeler kind of

became a surrogate grandmother to us,” Jodi says. “She taught us the practice of how to extract these herbs and make medicine out of plants and understand the science behind them.” With help from their mother, Kathy Scott, the sisters made the salve for friends and family.

To this day, the team maximizes the potency of its products (all made in the USA, with 100 percent all-natural herbs and oils) through an infusion process that it says is the “defining characteristic” of the business. Jodi explains:

“Our proprietary infusions take an old-world concept using new-world technology” with the time and temperature the two key components. “What you don’t want is have too high of heat that kills the medical properties from the plants. Also, you want to have a period of time that we have identified as the optimal time frame where you are not only yielding the highest amount of the medicinal properties but also reducing waste.”

The sisters sold Green Goo under the company name Sierra Sage in 2009, also selling to farmers markets. Shortly after, in 2010, one of the strongest typhoons to hit the Philippines in years changed their path anew.

“My sister went to the Philippines after the typhoon with her husband, Chris Sparks, an EMT,” Jodi says. “When they were going into these remote locations with a machete and duffel bag of emergency medical care, they saw how incredibly complicated it was. She was going through these remote locations saying, ‘If I didn’t have to carry so much first aid stuff, I could have brought more people food.’

“When she came back and shared that with me, we realized that we needed to make a product that was more versatile and more portable—a topical first aid that not only acted as a Neosporin and topical antibiotic healing ointment but that also took the sting and itch away; could be used for blisters, bug bites, bee

PHOTOS BY STEVE FASSBINDER



“Neither of us knew how to bring a product to market, so we sought out people who did.” —JODI SCOTT, SIERRA SAGE CEO

stings, poison ivy, cold sores, sunburn; and which, as a coagulant, slowed down the bleeding and sped up the healing. It had to be a full-use treatment for emergency medical care.

“One of the problems with first aid is, there are a lot of one-time-use products out there. Maybe you get poison ivy and use the product, and the next time what you have in your first aid cabinet is either expired, old or gross. We wanted to make our first-aid products more portable, versatile and more broad-spectrum. All of our products have kind of followed that methodology. Our Castile wash is something you can wash your dishes with, your hair with, your body with.”

Jodi and Jen evolved their existing salve formulas and developed a loyal following. In 2011, “Natural Grocers, at the time a chain of 50 stores, expressed interest in carrying the line. That’s when Jen and I made the decision that we could turn our hobby into a business.”

2 early challenges

The sisters had some impressive degrees in their background, but business wasn’t one of them. “Neither of us knew how to bring a product to market, so we sought out people who did,” Jodi says.

During the early stages of the company, the sisters were producing the product in a small warehouse with commercial kitchen equipment and selling the product as a cosmetic. To expand the business, they needed to produce their product in an FDA-approved facility,

and have all of their vendors provide certified organic products.

This turned out to be tougher than expected. Jodi remembers “the first seven or eight manufacturers we approached just told us no. One reason was that not many manufacturers were making herbal creams and salves, and they didn’t really have the right equipment. Manufacturers are always reluctant to invest in production for a small company when future sales are uncertain.”

The sisters were stymied until organic production became more commonplace. “One company took a giant leap of faith and agreed to start production for us,” Jodi says.

Finding a manufacturer wasn’t the only challenge. Sierra Sage’s formulas were a key to future success. Extracting medicinal properties from plants is not like mixing chemicals, and upscaling production from a commercial kitchen to a manufacturing facility called for careful testing.

“When we went into retail and wanted to work to fight the notion that organic medicines were not as effective, we knew it was important to go through the FDA registration and identify the herbs as the FDA recognizes them,” Jodi says. “At the time, there was no technology on the market that did these infusions we were doing, so these manufacturers didn’t want to deal with them.”

Finalizing the manufacturing process took four years to put everything together, with production ready in 2014.

Four of the five family members of the Sierra Sage/Green Goo team: Jodi Scott (second from left) and her husband Kelly Hoyt (left); Jen Scott and her husband, Chris Sparks. Jodi’s and Jen’s mother, Kathy Scott, is also actively involved. Their first-aid and body care products have “no bad stuff. No sneaky stuff.”

'Wake-up call'

As they were working out the manufacturing bugs, the sisters knew they had to increase sales. Jodi had now taken on the sales role. Her first big sale, in 2012, was to AAFES (Army Air Force Exchange Services), which runs the PXs (post exchanges) at military installations around the country. "AAFES was committed to adding organic products and were very interested in Sierra Sage's products," Jodi recalls.

They started a small market launch in 2012-2013 in 30 PXs. The products were selling, and AAFES kept expanding sales. But in 2015, AAFES reported that Sierra Sage's products weren't selling as well as competitive products. It was considering dropping the line.

"It was a giant wake-up call to us," Jodi says. "We needed to go back and rebrand the product and create sales velocity." The company looked at sales over the years and realized that customers were not calling the product Sierra Sage, but rather Green Goo—the product's original name.

"The original first aid for cuts, scrapes, etc. was called green goo. Everything else had different names. When we went through the branding process, no one remembered us as Sierra Sage. They just always remembered us as the Green Goo product, because that was the flagship product we started out with."

The company went to a rebranding strategy, with new packaging, logos and graphics, and committed to a product relaunch in April 2016. AAFES committed to the relaunch.

Sales growth for Sierra Sage had already gone into overdrive in fall 2015, when Walmart agreed to a

The all-natural herbs sit on a drying rack. Herbs are carefully harvested at their peak from organic farmers or organically grown in-house. The fresh and dried herbs are infused in organic oils, rather than using pre-made extracts, to increase the products' medicinal value.



100-stores test. Things have escalated from there: The company is sold in 14,000 Walmart stores, online by Target, and is carried in major chains such as Safeway, Albertsons, Roundy's, HEB, Natural Foods and a host of smaller chains and individual stores—more than 25,000 stores overall.

The company's growth poses some new possibilities. Until 2017, Jodi Scott handled all sales for the company. The company considered using brokers and sales reps but found that its sales volume was too low to entice distributors to take on the product.

Last year marked the first time that sales reps produced any orders for the company, which is considering adding brokers although not committed to that strategy. In addition to a heavy retail store presence, Green Goo First Aid Salve and a variety of other creams and salves from the company are available online at the company's website and at a wide variety of other online retailers.

A committed family

Five family members now work fulltime for Sierra Sage/Green Goo. Jodi is CEO; her sister is the herbalist and formulator. Kathy Scott's experience as a military wife has made her adept at "portable jobs," as Jodi calls them, so she is the webmaster and director of social media marketing. Chris Sparks is the warehouse manager. Kelly Hoyt, Jodi's husband, handles software development and interface.

They celebrate their varied skillsets. "It is beyond words how gratifying it is to work with my sister," Jen says. "We complement and balance each other. Our differences are what makes us complete and what I think is our biggest success."

Those important differences come with a shared passion that "has gotten us through some incredibly challenging times," Jodi says. "We're most proud of being part of a larger mission that emphasizes wellness and community. We are changing the way the industry engages with products and how customers engage with products, whether it's healthy living or environment and sustainability within our humanitarian efforts. It's all about synergy and passion." 🍀

Details: greengoohelps.com

Don Debelak is the founder of One Stop Invention Shop, which offers marketing and patenting assistance to inventors. He is also the author of several marketing books, including Entrepreneur magazine's Bringing Your Product to Market. Debelak can be reached at (612) 414-4118 or dondebelak34@msn.com.





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PART 2 OF 2

How To Make Soft Goods Prototypes

SEWING SKILLS HELP, BUT AREN'T ESSENTIAL WITH FABRIC AND TEXTILES **BY JEREMY LOSAW**

When I was young, one of my favorite go-to activities was needlepoint with plastic canvas. My mom would take out library books that had patterns such as frogs and panda bears; my sister and I would dutifully count the squares, trace the patterns with a marker, and cut out the shape. Then my mom would thread yarn through a blunt-tipped needle, and it was off to the races.

Hours would pass as we pulled yarn through every square hole until we had our animal or lightswitch cover. My mom, ever the show-off, would even combine panels of needlepoint to make tissue box covers and other knickknackery. This silly fun was a great lesson in how much effort goes into making a soft goods prototype.

In Part 1 last month, I gave an introduction to soft goods and talked about how they are characterized. This second and final installment reviews some techniques for how to make prototypes with fabric and textiles.

Early prototypes

Although knowing how to use a sewing machine is a great skill, it is not necessary in early-stage prototypes. Most proof-of-concept prototypes can be made with common office supplies. You can cut fabric with scissors and use a stapler to hold together different panels of material. A hot-glue gun is a helpful tool during the mock-up stages, or it can be used to simulate the gripping features that you see on the bottom of no-slip socks or on some athletic wear.

In proof-of-concept prototypes, it is not crucial to spec out the perfect material for the final product.

Fabric can be harvested from old garments you have around the house, and the thrift store is a great way to get inexpensive materials. Craft foam comes in inexpensive sheets that are flexible and can be used for cushioning or to add structure. Some soft goods require buckles or other hardware. In many cases, these can be harvested from old backpacks or other gear

Patterning

Because soft goods are thin, they are processed as sheets and cut based on two-dimensional patterns. Fortunately, any 3D shape can be broken down into 2D panels. A beach ball is a perfect example; the spherical shape is built with six identical narrow elliptical panels.

Patterns for a prototype can be made in a few different ways. If you have a 3D CAD file of the part, the CAD program will let you unfold a 3D surface into a 2D shape. The other way to do it is to build up the shape on a mannequin or other rigid form. Sheet material can be laid over the form and strategically cut to form patterns over the shape. Tools such as a cloth ruler and pins help get dimensions and hold the panels in place.

If you get stuck as to how to break up the shape, looking at commercially made garments is great inspiration. Once the prototype is made, it can be disassembled and laid out flat and traced on paper or scanned to extract the panel shapes.

Advanced prototyping

As the prototype gets more refined, you may need better materials. A fabric store is your best friend here; good ones will have batts of many different materials with varying weight, stretch, breathability and wear resistance. This is a great way to physically feel it and get samples to test. Most fabrics are only a few dollars a yard, so it is inexpensive to make iterations. Fabric stores are also loaded with accessories that you may need: Velcro, piping, webbing, buttons to finish the piece.

Most soft goods products require sewing for them to work properly. If you are handy with a sewing machine, you can make advanced prototypes yourself. If not, you can enlist some help, such as an alterations shop. Depending on the shop's level of skill and willingness, you can have quality prototypes made inexpensively. It is always best to get a non-disclosure agreement in place before showing the shop any sketches or prototypes. Then it is up to you to provide as much detail as possible to get the job done. It is not unheard of to get a custom-sewn prototype for less than \$100.





Patterns can be made easily with paper and tape.

The Kniterate digital knitting machine can turn you into a do-it-yourselfer.

A thrift store, fabric store and an alterations shop can provide inexpensive materials and help.

If you have a knit soft good, computer-programmable knitting machines can help. Industrial versions are used for manufacturing goods such as socks and sweaters. These are expensive pieces of equipment, but you may be able to rent time on a machine in your area or reach out to a group that has some of this equipment available for start-ups with soft goods products. Consumer versions of these machines, such as the Kniterate (kniterate.com), cost a few thousand dollars and can help you make your own knit goods.

Prototyping wearable electronics

The Internet of Things (IoT) is driving a lot of innovation in wearable connected devices. Adding circuitry to clothing can be tricky, but you can use special prototyping techniques to make it easier.

Many microcontrollers are laid out specifically to be integrated into clothing. The Adafruit Flora line of microcontrollers is made specifically for creating wearable prototypes. Combined with conductive thread, the microcontroller can be sewn and electrically connected to satellite modules such as Bluetooth Low Energy or LEDs. This makes the electronics layout simple to execute. Just make sure that you do not put them through the wash.

Different types of electronic accessories are helpful for wearable applications. Pressure-sensitive material such as Velostat can be helpful for making buttons, with sew-on pouches available for holding batteries.

Finishing

When the prototype is complete, you have many great options to add decorative touches that will give it a polished look. Art or logos can be applied to the part via silk screen, heat transfers, embroidery or pad printing. Most of these options should be available from local sources. If you need custom-printed fabrics, services such as Spoon Flower (spoonflower.com) will print custom designs from your art, and you can add piping or other accent materials to make the product pop.

Once you have a proof of concept when prototyping your soft goods product, you can get deeper into making good patterns and custom-sewn prototypes with killer finishing touches to wow potential investors or customers. ☺



The Adafruit Flora has a circular shape with large input and output holes that make it easy to add to a soft good.

Know Your Obstacles

CONSIDER POSSIBLE BARRIERS TO COMMERCIALIZATION SUCCESS **BY JOHN G. RAU**

So you've got this great idea for a new product invention and you want to commercialize it. You are probably thinking about applying for a patent so that no one will steal your idea, even though you may not even have much money to invest.

In spite of this, you're ready to tell the world, "I have this great new product that everyone needs to have and will love!" You're ready to enter the marketplace.

Hold on. Obviously, you should consider whether there are any major barriers ahead. According to businessdictionary.com, barriers to entry are "Economic, procedural, regulatory, or technological factors that obstruct or restrict entry of new firms into an industry or market."

Examples of barriers

In his blog "Dobkin Unleashed," Jeffrey Dobkin with the American Society of Inventors presents some illustrative examples of barriers that may make your invention commercially infeasible:

- Your invention is not much better than existing

Hurdles can be economic, procedural, regulatory, or technological.

solutions to the problem being solved—i.e., it isn't faster, better, cheaper or more powerful. This would imply that your chance of getting a good return on your investment is reduced. This doesn't mean that it's not a good idea; it may just be more difficult to sell.

- Your estimated manufacturing costs may be too high, making it difficult to net a significant profit. Every product has a typical selling price range. Under that price, you may lose the perception of a quality product. Over it, your target customers will most likely opt for competing products.
- There may be no way to exclusively target the people who would be the most likely to buy your new product. You can't "blanket the world" and advertise to everyone; it's too expensive.
- Your need to educate everyone about how to use your new product and why it's better is too expensive.
- Similar products in your market have tied up all distributors to your retail stores and to potential customers of interest in your target market. There's no way in!
- You don't have enough money to make it happen and don't know where to get adequate funding.

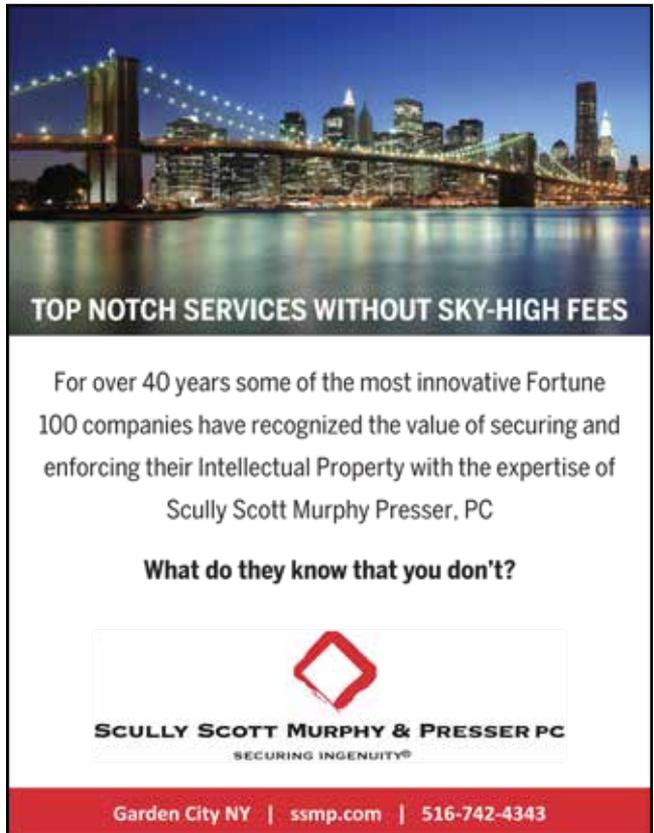


Don't forget these

Those real-life situations and possible problems are not to be ignored. But there are other considerations.

- **Patentability and licensing issues.** If similar products are already covered by multiple patents and/or licensing agreements, a new product must avoid potential infringement issues. Usually, it is better to seek some form of patent protection, if possible, to establish ownership of something potentially marketable. However, in some cases, patent protection is not essential to successful commercialization. (That said, the prospects for obtaining a license for an unpatented product are very slim, as many manufacturers will not even preview unpatented ideas or inventions.)
- **Prototype development.** A prototype can show manufacturers, prospective licensees and investors what the end result is supposed to be and, as a result, get you the attention you need. But this can be expensive, so you'll need adequate funding for this. Traditional sources of capital (angel investors, venture capitalists, small business investment companies, investment bankers, etc.) want valid proof of the invention before they invest.
- **Costs and pricing.** This is an important consideration even if you think you'll have enough access to capital. In the early decision stages, you may not be able to estimate your exact cost to manufacture and introduce your new product into the marketplace, but if you think your costs will be pretty high and you will be competing with relatively low-cost products, your idea will probably not be worth pursuing.
- **How much customers will pay.** The key question is whether your target customers will be willing to purchase your product, given the choices for competing products. Timing and associated start-up costs could be a major deterrent, as it may take a considerable amount of time and capital resource expenditures before you are able to get your initial product versions into the marketplace. Can this new product be produced profitably and offer a reasonable return on investment? If you can't achieve this, don't do it.
- **Government regulations and laws.** Many industries have rules and licensing requirements that affect how a business operates and the costs of doing business. Often, the costs associated with meeting regulations and various standards, and achieving necessary permits and licenses, do not make sense for a new business. Dealing with government regulations at the federal, state and local levels could be a real deterrent to trying to develop a new product and enter it into the marketplace. Although some of these obstacles can be daunting, remember the words of motivational author Sonya Parker: "Don't be afraid to try something. If it fails, you can always try again and again until you succeed." That's what Edison did. 📧

John G. Rau, president/CEO of Ultra-Research Inc., has more than 25 years' experience conducting market research for ideas, inventions and other forms of intellectual property. He can be reached at (714) 281-0150 or ultraresch@cs.com.



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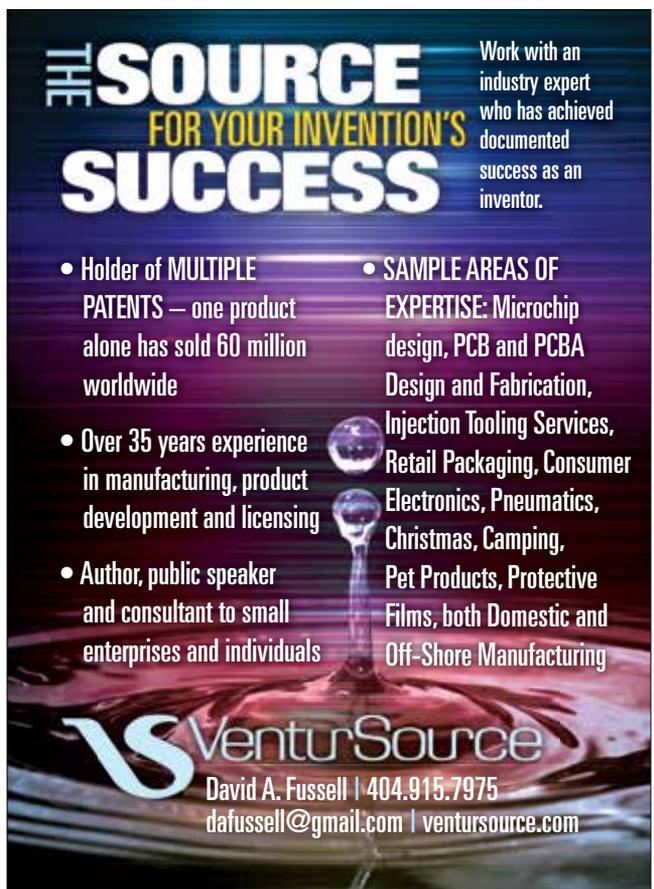
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Bitcoin, 'Bit-Cars' and Bittersweet News

FUTURE CURRENCY AND TECHNOLOGIES WILL AFFECT PATENTS—AND YOU **BY LOUIS CARBONNEAU**

A few momentous recent events have important IP-related ramifications:

- After surging spectacularly for months (from \$1,000 to \$19,000), cryptocurrency or bitcoin continued an apparently limitless climb after it became possible to trade the currency on the open market.
- We are seeing a collision course between car manufacturers and technology companies that could lead to the next patent war ... or not.
- Republicans passed a first-in-a-generation massive tax cut that should cut most people's tax bill (at least in the short term) ... except for patent owners.

The race is on

Bitcoin is seen by many as the currency of the future. Decentralized and decoupled from any country and its politics, this is the perfect standard for the digital age. The way it is created ("mined"), exchanged and protected relies on sophisticated technologies and underlying IP that belong not to government, but to corporations.

Accordingly, we are witnessing a race between the main stakeholders—mostly banks and large technology companies—jockeying for a dominant position to own large swaths of blockchain-type patents. (A blockchain is a subtype of distributed ledger data structure in which transactions are grouped into "blocks" that

reference each other in cryptographic hashes.) Bitcoin cuts the middleman and is not subject to the usual restrictions that many countries impose to the free circulation of money.

Fast-forward 10 or 20 years from now, when bitcoin has become the new dollar, and I ask you: How will you feel knowing that the money you use for everything, from buying milk to selling a house, belongs to private parties who can control new entrants through their intellectual property? And what happens when the money disappears suddenly, as a result of hacking?

I believe we are witnessing the beginning of an experiment that few governments are ready for, and it will take a while for the regulatory framework to catch up with the market. Meanwhile, keep a few dollars in a safe, just in case.

When bitcoin has become the new dollar, how will you feel knowing that the money you use for everything belongs to private parties who can control new entrants through their intellectual property?






**CONNECTED
CARS**

A preemptive strike

“Bit-cars” or connected vehicles lead the current furious race to create smarter, and eventually fully autonomous, vehicles. That race pits traditional car manufacturers against new entrants such as Tesla and Uber, and large consumer technology companies such as Apple and Google (via Waymo). Fueling this trend is a sudden adoption of connectivity-related technologies (telecoms, sensors, IoT, AI, etc.) that have not traditionally been the core business of carmakers. This has left many of them vulnerable, as they have historically focused mostly on the driving part of the problem.

It is clear here again that those controlling the underlying IP will be able to either dictate some of the rules, or at least improve the odds of remaining relevant. One preemptive move in that direction came in late December from newly formed patent NPE Avanci, which released its licensing program whereby it will require car owners to pay between \$3 and \$15 per “connected” vehicle. It announced by the same token that German car giant BMW was its first licensee.

Avanci has pooled patents from Qualcomm, Ericsson, ZTE and a few others. It claims to now cover almost 50 percent of the standard essential patents relating to 2G, 3G and 4G technology. It will be interesting to see whether others follow suit after BMW (which lends credibility to the NPE licensing model in the automotive space), or if the auto industry takes a page from tech companies and fights tooth and nail against any efforts by patent owners to monetize their assets in that space while the legal environment still favors the infringers. Either way and even in the current buyers’ market, this has caused many connected car patents to command a premium.

The ominous Page 259

The good news first about the House and Senate reaching a broad consensus on a massive **tax cut bill**: Most corporations’ corporate tax rate will sink from 35 percent to 21 percent—though truth be told, many of the large U.S. companies that know how to use every loophole in the law never came close to paying that rate in the first place. There is a similar, albeit indirect, cut for what we call “pass-through” companies such as limited liability companies and “S-Corps.”

The bill is 560 pages long, so I don’t expect anyone to read it—including the ones who voted for it. But thanks to the document’s search capability, it takes seconds to find the following ominous text on page 259 of the reconciliation section. This should prompt anyone who owns patents to call his or her congressman or senator:

“This provision amends section 122(a)(3), resulting in the exclusion of a patent, invention, model or design (whether or not patented), and a secret formula or process which is held either by the taxpayer who created the property or a taxpayer with a substituted or transferred basis from the taxpayer who created the property (or for whom the property was created) from the definition of a ‘capital asset.’ Thus, gains or losses from the sale or exchange of a patent, invention, model or design (whether or not patented), or a secret formula or process which is held either by the taxpayer who created the property or a taxpayer with a substituted or transferred basis from the taxpayer who created the property (or for whom the property was created) will not receive capital gain treatment.”

In short, under the proposed bill, the sale of patents—even after holding those assets for years—will no longer





be considered (and taxed as) a capital gain, meaning they will have the same tax treatment as licensing royalties that are taxed as regular income. So if you are a corporation and your marginal tax rate just went down 21 percent (capital gain is generally taxed between 15 percent and 20 percent), this is not such a big deal.

But if you are an individual owner and your marginal rate will still be above 35 percent under the new bill, this has a significant negative impact. It therefore becomes readily apparent that the way patents are held will require additional thinking so that they end up being owned by an entity that can better benefit from the new tax provisions.

Winners, losers

Although most pundits predict that the U.S. Supreme Court will not abolish the Patent Trial and Appeal Board (SCOTUS's decision can come any time before June), there was some rare good news for patentees recently: The invalidation rate of inter partes reviews (IPRs), a trial proceeding that reviews the patentability of claims, seems to be inching closer to 50 percent after hovering around 75 percent for years. These data are mostly from 2016, though our understanding is that this trend continued in 2017.

However, the success achieved by many large corporations who can now file IPRs directly—as a way to make a litigation risk go away—has put enormous pressure onto defensive aggregator **RPX Corporation**, whose model has traditionally been to syndicate the buying of patents in lieu of fighting them in court. This has, in turn, affected its stock and attracted an unsolicited offer by a private group to buy the publicly traded company for about \$800 million, which would be slightly above its current valuation of \$668 million. RPX management announced a major reorganization in which a few of its

top executives left the company, seemingly to improve its balance sheet. It will be interesting to see if this is followed by additional layoffs.

On other fronts, **Ericsson** emerged victorious and \$75 million richer after a protracted patent battle against Chinese owned TCL, while **ROVI** prevailed against Comcast in another patent dispute. Canada-based Bombardier found itself on the receiving end of yet another patent infringement decision. This time it was against snowmobile competitor **Artic Cat**, awarded \$50 million by a jury. When it snows ... Finally, a U.S. jury awarded wireless speaker company **Sonos** a rather symbolic \$2 million in its litigation against competitor Denon. Wearable manufacturer **Fitbit** resolved its pending litigation against former nemesis and now bankrupt Jawbone.

New trend under fire

Apple filed an IPR challenge against patents currently owned by the three **Affiliated Tribes of the Fort Berthold Reservation, North Dakota**, in a move that will force the PTAB to take sides on the controversial issue of sovereign immunity of certain patent owners such as universities and native tribes. Many on the infringement side see this as a serious loophole that needs to be plugged quickly and the stakes are pretty high on both sides, as reflected by numerous amicus curiae briefs recently filed by both sides on this topic in a related case.

On the legislative front

The U.S. Senate Judiciary Committee unanimously confirmed **Andrei Iancu** as new commissioner of the United States Patent and Trademark Office, paving the way for final approval by the full Senate. In parallel, the new **Inventors Act**, a wish list of pro-patentee provisions, was “rolled out” to the House of Representatives though not actually proposed as a bill yet. Even if it makes it officially to the floor, this bill will probably join the other 7-8 bills that are still pending, some for at least three years. But the fact that we now have almost as many pro-patent bills as those wanting to “reform” patent law even further is by itself telling, in that the narrative has finally changed. ... Meanwhile, the USPTO announced that it will introduce a new electronic patent filing system in 2018. 📧

Around the world

Europe is not all about Brexit these days, as we were reminded when the **Netherlands** threatened to force pharmaceutical companies into a compulsory licensing scheme in order to keep the cost of drugs affordable for the Dutch. This came on the heels of a German court decision that forced Shionogi to license a key drug patent to Merck.

In **India**, the country has its own PTAB problem. Thousands of patents are in limbo while waiting for a decision on the constitutionality of the IP Appellate Board. It almost feels good sometimes not to be the only ones playing with a broken toy.

China never invaded **Cambodia**, but now its patents are doing that: It was announced that Chinese patents will now be validated in that country. Meanwhile, the **European Unitary Patent system** is going on 42 years in the making, with no closure in sight.

Louis Carbonneau is the founder & CEO of Tangible IP, a leading IP strategic advisory and patent brokerage firm, with more than 2,500 patents sold. He is also an attorney who has been voted as one of the world's leading IP strategists for the past seven years. He writes a regular column read by more than 12,000 IP professionals.





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PATENT SEARCH

1 0 1

Why U.S. Searches Are Critically Important

UTILIZING THE ANSWERS TO THESE 7 QUESTIONS

CAN SAVE YOU TIME, WORRY AND MONEY **BY GENE QUINN**

Inventors frequently ask why they need to spend the money on a U.S. patent search, believing that patent searches are unnecessary. The various iterations of this question start with “Why do I need a patent search when I’ve already searched and cannot find anything?” to “There is nothing on the market like my invention, so why would a U.S. patent search be necessary?”

Surveying the market is a wise first step, but there may be patents lurking. There are various reasons for this: One may be that an independent inventor or small company came up with the invention previously, filed and obtained a patent, but then lacked the resources or know-how to bring the product to market. Then when others came up with the same or similar idea and found that issued patent, they abandoned the project and never took the product to market because they could not own the exclusive rights—which meant that if the product succeeded on the market a larger competitor could simply copy with impunity.

It is also a wise first step to do your own patent search if you are an inventor. Spending time looking for related patents—and perhaps even more important, reading related patents—is very useful. If you can find a patent reference

that you feel is too close for comfort, you have saved the money associated with paying for a professional patent search and/or hiring a patent attorney or patent agent.

Notwithstanding, I am always skeptical when I hear inventors say they have done their own U.S. patent search and have found nothing. Patent searching is as much an art as it is a skill, and if you are not familiar with advanced search strategies it is not surprising that you are unable to find anything too close. But rest assured, there are always patents to find that are at least similar in some ways. I have put together a patent search tutorial that will help give you some strategies. So definitely start with your own patent search, but at some point before spending thousands of dollars to obtain a patent you should get a professional patent search and patentability opinion.

If you hire a professional patent search firm, you may want to also consider adding an international patent search. Some search firms may already include an international patent search in the price, or at least a search of certain foreign databases. Although U.S. patent searches are essential, international patent searches are preferable if you can afford the extra cost.

1 Why do a patent search? The patent process can be expensive. The last thing you want to do is spend a lot of money preparing and filing an application when there is easy-to-find prior art that will prevent a patent. For this reason, many inventors and businesses choose to begin the process by paying for some kind of patent search. You save the expense of a patent application if knock-out prior art is located. If there are no serious roadblocks, the patent search normally leads to a better, stronger patent application and potentially smoother application process.

This is because the first application filed is crucial. All aspects of your invention must be disclosed; nothing new can be added without compromising the all-important filing date (aka the priority date). After having done a patent search, the initial disclosure can be specifically written to carefully define your invention so as to focus on what is most likely the patentable feature or components.

2 Who can do a U.S. patent search? Anyone can do a patent search using the online United States Patent and Trademark Office database, but this database only contains patents issued since 1976. So, this search is not complete. Google's patent search engine is very quick, and it includes patents dating to the early 1800s. Unfortunately, Google Patents has a limited number of searchable fields. Still, Google Patents is an excellent first place to start, particularly where you don't know exactly what you are looking for.

How can you not know what you are looking for? The answer is simple. You know your invention but likely won't know the exact language patent practitioners typically use to describe the features and functions of your invention.

Many years ago, I was doing a search on a bubble mailer but couldn't find anything initially. After spending a little time searching, it became clear that the term "bubble mailer" was not the way that patent practitioners were describing this.

To find the best results with a word search, you need to know how patent practitioners describe things in patent applications and issued patents—i.e., when the most relevant prior art will be located. Using Google Patents at least initially is very helpful, because it searches synonyms.

3 What are the next steps in your search? After you find some relevant patents, you might find it helpful to switch over to FreePatentsOnline.com, which allows for specific fields to be searched. Using both FreePatentsOnline.com and the Google Patents search makes a lot of sense.

The best and most reliable patent search will be done by a professional who is intimately familiar with both advanced searching techniques and classification systems. If you are not familiar with advanced search techniques and classification, you are almost certainly going to miss the most relevant prior art in your own search. So search on your own to see if you can find something without spending any money, and to educate yourself on what information is included in patents. Then, before you file, remember that it is better to spend hundreds of dollars on a professional patent search now than to spend many thousands of dollars and learn later that you can't get a patent.

4 Why can't I just get a cheap patent search? Before you purchase a no-frills patent search, it is important to know what you are getting. Frequently, overseas providers are the ones offering bargain-basement prices. These searchers may not speak English as their first language, and sending technical information overseas can violate U.S. export laws. Respect for propriety rights may also be limited, making it culturally acceptable to take or share propriety information.

Having someone who does not speak English as his or her first language and who does not live in the U.S. do a patent search is extremely dangerous. I have no doubt overseas searchers are intelligent, but the way you find references is by knowing how patent attorneys and patent agents would or could describe various features and components. Therefore, intimate familiarity with the English language and common usages of the English language are essential.

5 Does a professional patent search come with a guarantee? Unfortunately, there are no guarantees. Pending patent applications are published 18 months after filing, which means not all relevant prior art can be found even with a professional patent search. Even an exhaustive and professional patent search cannot locate everything pending and not yet published.

Additionally, when you do apply for a patent, it is extremely likely that the patent examiner will rely on at least some patents that you did not know about. Examiner rejections are sometimes unanticipated. It can also be due to the fact that the description of the invention is unintentionally overbroad. Sometimes it is because an examiner will weave together multiple patents to make a rejection.

Receiving a rejection from a patent examiner is as common as paying taxes every April 15. The key to obtaining a patent is to have an application with sufficient disclosure (both broadly defining and narrowly defining your invention) so that if an examiner does make a rejection or find prior art, you can amend your application as necessary to satisfy the examiner and obtain a patent. Therefore, it is important to understand that the goal of a patent search is not to guarantee that there is no relevant prior art that will bar patentability, but rather to investigate whether pursuing with the expense of a patent application makes sense. Patent searches allow you to make fully informed business decisions.

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Before making your choice of attorney, you should give this matter careful thought. The selection of an attorney is an important decision.

6 What about U.S. patent searches from invention promotion companies? There is a dark side to the invention marketplace, and inventors need to be careful. No better example exists than the Federal Trade Commission winning an injunction against World Patent Marketing, a company charged with devising a fraudulent scheme to use consumer funds to enrich themselves.

Part of the typical invention scheme is to tell you what you want to hear. Suspect companies tell you that they are excited to work with you and recommend a patent search that will cost about \$800 (typically). Then they come back with great news: They cannot find any patents that relate to your invention, which should be a red flag. With nearly 10,000,000 issued U.S. patents and many millions of published patent applications, it would be quite rare for an invention to address a problem never before considered by anyone.

When you purchase patent searches, you do not get a patentability opinion, nor do you get to talk to someone to help you interpret the results of the search.

Although it is perfectly legitimate for companies to work together, it is extremely unusual for any company to provide a professional patent search, engineering support, licensing services and legal services. In fact, ethics rules largely prohibit patent practitioners from working with these types of companies. So be careful (and suspicious) if you never get any direct contact with a patent attorney or patent agent.

7 Do I need a patent attorney for a U.S. patent search? If you only pay for a professional patent search you are going to get just a list of patents that are relevant, or maybe copies of the patents. When you purchase patent searches, you do not get a patentability opinion, nor do you get to talk to someone to help you interpret the results of the search.

For competent, thorough U.S. patent searches alone, you would pay at least \$400 for something that is relatively simple and up to \$800 to \$1,000 for a search alone on something complex, or one that deals with software. This cost is for the professional patent search alone; it does not include the cost of an attorney to review the search and offer an opinion about patentability. ☞

Gene Quinn is a patent attorney, founder of IPWatchdog.com and a principal lecturer in the top patent bar review course in the nation. Strategic patent consulting, patent application drafting and patent prosecution are his specialties. Quinn also works with independent inventors and start-up businesses in the technology field.





Another Patent Reform Advocate on the Way Out

CONGRESSMAN HAS RECORD OF NOT BEING FRIENDLY TO INDEPENDENT INVENTORS

BY GENE QUINN AND STEVE BRACHMANN



U.S. Rep. Darrell Issa's announcement that he will not seek re-election this year and will retire from Congress means that the three most ardent Republican supporters of patent reform in the House of Representatives will not return for the 116th Congress next January.

Issa's January 10 announcement comes as welcome news to many patent owners. They have watched the U.S. patent system collapse during the past 12 years as the result of congressional action, the creation of the Patent Trial and Appeal Board, and unfavorable decisions from the U.S. Supreme Court and U.S. Court of Appeals for the Federal Circuit.

"We are applauding Congressman Darrell Issa's decision to not run for re-election in California's 49th District," said Paul Morinville, an inventor and founder of US Inventor. "Issa was a key driver in the last decade of job-killing legislation and other changes to the U.S. patent system that have seriously weakened our nation's innovation engine. His broad changes in the patent system have discouraged investment in innovative start-ups."

Issa, who currently chairs the House Judiciary Committee's Subcommittee on Courts, Intellectual Property and the Internet—and who narrowly won re-election in 2016—has been an outspoken advocate for the need for more patent reform. He has steadfastly proclaimed that additional patent reforms are necessary in order to provide relief from those he believes are abusing the patent litigation system, those sometimes called patent trolls.

During the opening of one particular hearing, he said the term "plaintiff" and "troll" are interchangeable.

He joins two other strong Republican supporters of patent reform who will not return for the 116th Congress. House Judiciary Chairman Bob Goodlatte (R-Va.) announced his retirement in November, as did Lamar Smith, former House Judiciary chairman and co-sponsor of the 2011 America Invents Act.

Holds 37 patents

Issa's district includes areas of San Diego and Orange County. He has been a member of the U.S. House of Representatives since January 2001.

According to the biography on his House website, he served in the U.S. Army after graduating high school and became the CEO of Directed Electronics, Inc., a company Issa founded in the mid-1990s that sold anti-theft devices for vehicles such as the Viper car alarm. He has served as the chairman of the Consumer Electronics Association, now the Consumer Technology Association.

"As the holder of 37 patents himself, Issa has been vigilant about protecting the intellectual property rights of artists and other entrepreneurs to help protect America's position at the forefront of innovation and creativity in the entertainment and technology industries," his bio reads. According to *The Hill*, those 37 patents are the most patents held by a Congressional representative on record. (Not far behind is U.S. Rep. Thomas Massie (R-Ky.), who holds 29 patents and has spoken recently about the ways that the current patent reform debate is weakening the U.S. patent system.)

Given Issa's history with patents and innovation, one would have expected him to be more of an advocate for inventors and a supporter of strong patent grants being necessary to develop technology companies (as is Massie). But through the years, Issa demonstrated that he was not a friend to independent inventors—even being hostile toward them at times.

(Continued on page 42)

Rep. Darrell Issa's legacy on patent issues is complicated. He had a positive influence on how the federal courts structurally handle and assign patent lawsuits.

U.S. Rep. Darrell Issa (R-Calif.) chairs the House Judiciary Committee's Subcommittee on Courts, Intellectual Property and the Internet.



Another Patent Reform Advocate on the Way Out (cont. from page 41)

Known for his bombastic style, Issa explained to an audience at the National Press Club in February 2015 that he has seen the patent litigation process both as a plaintiff and a defendant. His message was clear to those opposing patent reform.

Issa told the audience that although Congress would listen to those both for and against patent reform legislation, the arguments of those opposing patent reform wouldn't matter. He said, point-blank, that those seeking alterations to the then-pending Innovation Act would not succeed. Ultimately, however, opponents of the Innovation Act did prevail, and that version of patent reform died.

'Heart was always with the system'

Even as many will celebrate Issa's decision to retire, his legacy on patent issues is complicated.

"As a patent owner himself, Chairman Issa understood the importance of a strong IP system," said Todd Dickinson, former director of the United States Patent and Trademark Office and current partner at law firm Polsinelli. "While some differed with him on his approach to specific reforms, his heart was always with the system, so losing someone who knew the patent system personally will be a loss."

Whether Issa was a hero or villain on patent reform is largely in the eye of the beholder. Many large corporations—such as Google, Cisco and J.C. Penney—have continued to seek additional patent reform ever since the America Invents Act was signed by President Obama in September 2011, and have found Issa to be a strong ally.

What is not open for debate, however, is Issa's influence in a positive way on how the federal courts structurally handle and assign patent lawsuits. "He should specifically be remembered for initiating the legislation that ultimately led to the judicial Patent Pilot Program, which has been a successful attempt to create focus and training among district courts and their judges having a particular interest in patent cases," Dickinson said.

Who'll succeed him?

Republicans hold a 46-seat advantage in the House of Representatives. If they hold on to that majority, it seems likely that U.S. Rep. Doug Collins (R-Ga.) will take over as chair of the House IP Subcommittee.

Collins, an ally to inventors and creators, is currently vice chair of the House IP Subcommittee. If he is granted the gavel, that would be good news for patent

Will the Supreme Court Remain Influenced By Patent Reform?

ALL SIGNS INDICATE SCOTUS WILL KEEP ASSUMING THE ROLE OF LEGISLATURE BY PAUL MORINVILLE AND GENE QUINN

We've analyzed all of the Supreme Court patent-related decisions since 2005, comparing them to proposed patent-related legislation pending at the time of the decision. Invariably, the Supreme Court takes a provision or two from pending legislation and makes it law, often word for word. In essence, it has taken on the role of legislature.

Having seen nothing to change this recent history, we base our predictions for 2018 on the premise that the Supreme Court will continue in this role.

PTAB-related bills loom

Two patent-related bills in Congress are the

STRONGER Patent Act and the U.S. Inventor Act. A third bill is waiting in the wings.

All three address the Patent Trial and Appeal Board. Two eliminate it, and one changes the constructs of PTAB rules to be more like a real court and consistent with the way disputes are handled in federal district court—which makes sense if you are going to keep the PTAB, given that it is supposed to be a federal court alternative.

If the Supreme Court stays true to form and incorporates the language of pending patent bills, it will invalidate the PTAB in the pending *Oil States Energy Services v. Greene's Energy Group*. This is exactly what should happen. It is also in keeping with

the court's trend of trying to stay out in front of legislation.

Another provision in all three bills is eliminating the abstract idea exception to subject-matter eligibility. This abstract idea monster has swallowed all of patent law exactly as the Supreme Court predicted it would in the decision that created the monster.

Recall, the Supreme Court warned about overzealous application, because at the root of all invention is an idea that starts the process. That admonition has fallen on deaf ears. Since all three bills address the landmark 2014 *Alice Corp. v. CLS Bank International* case on patentable subject

owners and those generally supportive of strong intellectual property rights.

Collins recognizes that “creativity undergirds the 21st-century economy,” and there is a need for strong IP protections. “From the beginning, Congress has had the responsibility of upholding and strengthening those rights—which fuel American ingenuity,” he has said. Collins also co-sponsored the Innovation Protection Act, which would provide a source of permanent funding for the USPTO.

However, Dickinson noted that with so many senior Republicans choosing to retire rather than run for reelection, 2018 could shape up as a “wave election.”

“To the extent that it signals a so-called ‘wave election,’ we will have to wait and see who will succeed (Issa) as chair of the IP subcommittee,” Dickinson explained. “We seem to be coming into a period of somewhat increasing balance in the Congress on patent issues in particular, so this may also signal movement in that regard.”

Although it is impossible to predict at this moment, should the Democrats take the House in the next election cycle, that could mean U.S. Rep. Jerrold Nadler (D-N.Y.), the ranking member on the House Judiciary Committee, or perhaps U.S. Rep. Zoe Lofgren (D-Calif.)

would become the new chair of the House Judiciary Committee. Both have been supporters of patent reform efforts.

U.S. Rep. Hank Johnson (D-Ga.), the ranking member on the Subcommittee on Courts, Intellectual Property and the Internet, could perhaps ascend to chair the House IP Subcommittee. Johnson has taken positions in the past favorable to patent owners, such as his amendment that would have substantially changed the fee-shifting provisions of the Innovation Protection Act. 🗳️



If Republicans keep their big majority in the House, it seems likely that U.S. Rep. Doug Collins (D-Ga.) will take over as chair of the House IP Subcommittee.

Steve Brachmann is a freelance writer located in Buffalo, N.Y., and is a consistent contributor to the intellectual property law blog IPWatchdog. He has also covered local government in the Western New York region for The Buffalo News and The Hamburg Sun.



matter and abstract ideas, if the Supreme Court stays true to form it will take a case to address it. It's uncertain whether the high court will invalidate the concept completely or just adjust it, but it will be addressed somehow.

What about injunctive relief?

All three bills also restore injunctive relief. In 2006, the Supreme Court passed *eBay v. MercExchange* into law, effectively eliminating injunctive relief based on language in pending legislation. But now pending legislation restores injunctive relief.

It can't be assumed that the Supreme Court will correct un-enacted legislation that it previously turned into law, no matter how wrong the decision. Although the predictive model for this story suggests the Supreme Court judicially seeks to enact pending patent reform legislation, beating Congress to the punch, it seems unlikely SCOTUS will overrule itself. Furthermore,

the Supreme Court has not always legislated every provision in every pending bill. So it seems likely that the high court will not address this issue of injunctive relief.

To get relief from the disaster that has been the eBay decision, we will need to go old-school and use the constitutional processes of passing legislation in the House and Senate, and then attach a signature from the president to restore the patent system to its constitutional underpinnings.

Then again, perhaps all we really need to do is underline, boldface and italicize Article I, Section 8, Clause 8 of the U.S. Constitution—which defines a patent as nothing but an “exclusive right”—and remind the Supreme Court that the only time the word “right” is used in the Constitution is with respect to intellectual property. Such an amendment would remind the Supreme Court of its primary role of defending that quaint document.

Of course, the Supreme Court doesn't

have much of a track record defending patent rights, which admittedly makes it somewhat difficult to predict that SCOTUS will find the PTAB unconstitutional or will do anything productive to address (or even define) the abstract idea doctrine.

After so many years of staying out in front of patent reform legislation that has weakened the U.S. patent system, dropped early-stage investment by 62 percent and sent venture capital, start-ups and complete swaths of new technologies to China, it would be odd if the Supreme Court doesn't do the same with pro-patent reform actually pending in Congress. 🗳️

Paul Morinville is managing director of US Inventor, Inc., an inventor organization working in Washington, D.C., and around the United States to advocate for strong patent protection for inventors and start-ups.





Data: PTAB Overwhelmingly Finds Patent Claims Defective

BY GENE QUINN AND STEVE BRACHMANN

According to Docket Navigator® data, there are 3,055 patents for which no final decision has been reached. Most noteworthy, among the 1,582 patents that have been the subject of a final written decision by the Patent Trial and Appeal Board, at least one claim has been found defective in 1,343 patents.

So the PTAB is finding that 85 percent of issued patents it reviews are defective to one extent or another.

Docket Navigator also makes it possible to focus on those patents in which there has been both a federal district court ruling on validity and a PTAB final written decision relating to validity.

Two hundred and twenty patents were found to be valid in various federal district courts that were also reviewed by the PTAB. Of those, 52 patents were determined to have valid claims by the PTAB while 168 patents had claims determined invalid by the PTAB. So, 76.4 percent of those 220 patents found valid in federal district court were found defective by the PTAB.

Critics of data off base

Some claim that using Docket Navigator data for this purpose yields unreliable statistics, because in federal district court challenges to validity can be made on the basis of U.S. Code Title 35 Sections 101, 102, 103 and 112, while at the PTAB only challenges based on Sections 102 and 103 may be made in an inter partes review trial proceeding.

That criticism is disingenuous, to say the least. With more opportunities and theories to invalidate patent claims in federal district court, one would expect the invalidity rate to be higher, not lower, in federal district court. Only being able to apply Sections 102 and 103 (and not 101 and 112), the PTAB still found that 76.4 percent of the 220 patents deemed valid in federal district court were defective.

Notwithstanding, critics have argued that this is not an apples-to-apples comparison because it is possible for claims to have been upheld in federal district court without a district court judge ever considering Sections

102 or 103. Apparently, the argument goes like this: The patent owner may prevail on Section 101 and/or on Section 112, and that might provoke the defendants to settle—so we will never know whether the claims would have survived a challenge under Section 102 and/or Section 103 in federal district court.

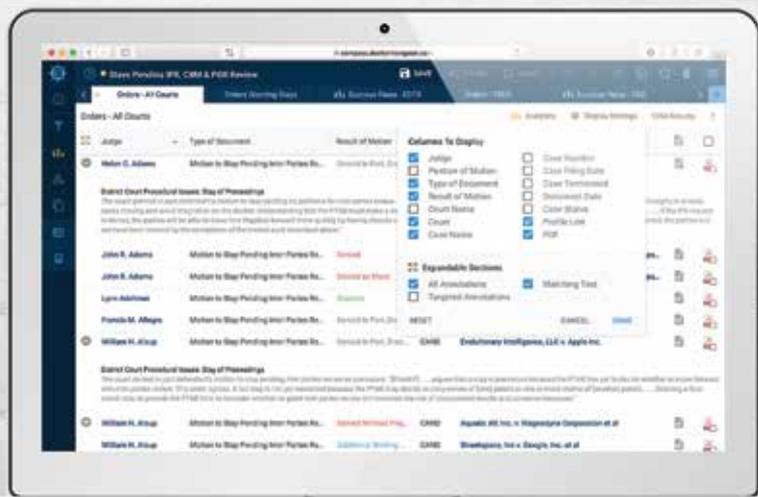
Such an argument is flawed on its face. Apparently, those critics would have us believe that defendants thought they had winning arguments based on prior art but settled anyway in federal district court, after receiving an adverse decision on Section 101 or Section 112? Anyone familiar with patent litigation would easily understand that in the pervasively anti-patent environment of the moment, a defendant would not settle in federal district court despite believing he or she had winning arguments on validity. To suggest otherwise is a fantasy.

A disturbing subset

Regardless, we know with absolute certainty of numerous examples in which there is a stark difference between what has occurred in federal district court compared to what has happened at the PTAB. Of those 168 patents found valid in federal district court but later invalidated by the PTAB, we found an interesting subset of 58 patents. In this subset, the federal district court specifically addressed validity challenges under Sections 102 and/or 103, confirming that the claims were valid. Notwithstanding this, the PTAB found the claims of those 58 patents to be invalid on the same grounds previously litigated.

If patent owners cannot have full faith and confidence in the patent granted by the federal government and similarly cannot have full faith and confidence in a final adjudication by the federal courts, how can they be expected to invest the millions, and sometimes billions, required to bring technology to the marketplace? 🐕

76.4 percent of 220 patents found valid in federal district court were found defective by the PTAB.



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IoT Corner

Sales of **smart home devices** dominated the 2017 holiday gift season, with voice-activated hubs such as Amazon Echo leading the pack and perhaps signaling a tipping point in this category.

Echo is a brand of smart speakers by Amazon.com. The devices connect to the voice-controlled intelligent personal assistant service Alexa, which responds to its name. The device is capable of voice interaction, music playback, making to-do lists, setting alarms, streaming podcasts, playing audiobooks, and providing weather, traffic and other real-time information.

Amazon reported that its Echo Dot smart speaker, powered by Alexa, was its best-selling item of the year. Concurrently, the Alexa app topped the iTunes charts, and the Google Home app was also in the top 10 briefly. In November, Lowe's announced it will open smart home "stores within a store" at 70 locations nationwide in a partnership with software-powered retailer b8ta. —Jeremy Losaw

Wunderkinds

Seventeen-year-old **Macinley Butson** has an unprecedented accomplishment on the world stage while being an inspirational role model. Last year, she became the first Australian in the INTEL International Science and Engineering Fair's 67-year history to win first place in the world. Her Smart Armour invention protects breast cancer patients' non-treated breast during radiotherapy. The 2018 New South Wales Young Australian of the Year has won awards for other inventions, such as a system that simultaneously collects solar power and filters water, and a spoon that measures and delivers oral medicine to children. Macinley has also been the Wollongong Young Citizen of the Year.



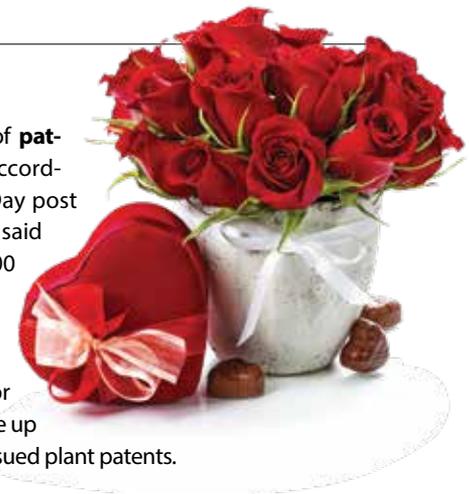
What IS that?

This one's pretty easy to identify at first glance: a **remote-control cockroach**. The question is, why? The main "selling point" appears to be the chance to scare the daylights out of people, though it could be a cool gizmo for Halloween (there's also the option of a remote control spider). You can control this realistic-looking vermin from 20-25 feet away. Just don't be surprised if your scare target stomps it to pieces. Several hundred have been sold on eBay; are you the next victim?

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600

The approximate number of **patents related to candy** according to a 2016 Valentine's Day post at yospinlaw.com, which said there are also more than 400 patents related to chocolate. The story added that on Feb. 14, 2016, there were 1,073 issued plant patents for rose plants. Rose plants make up more than 4 percent of all issued plant patents.



WHAT DO YOU KNOW?

1 True or false: The small circular plastic device that keeps a delivered pizza from hitting the inside of the box top (called a "package saver") was invented in 1983.

2 Before going into law, Andrei Iancu (recently approved by the Senate Judiciary Committee to become the next director of the United States Patent and Trademark Office) was:

- A) President of a Romanian limited liability company
- B) An inventor with several patents
- C) An award-winning engineer at Hughes Aircraft
- D) A liaison between Fortune 500 tech firms

3 Which patent came first—the one issued for the first submarine, or for the first phonograph?

4 True or false: There are patents for fruit trees.

5 Which U.S. president said that Americans should encourage "the introduction of new and useful inventions from abroad as to the exertions of skill and genius in producing them at home ..."?

- A) George W. Bush B) Barack Obama
- C) Donald Trump D) None of the above

ANSWERS: 1. True—though according to thoughtco.com, the inventor was "a guy from New Jersey." Nope. U.S. Patent No. 4498586A lists the inventor as Carmela Vitale, with a patent date of Feb. 12, 1985. The wife and mother living on Long Island in New York didn't pay her fees, and the patent lapsed in 1993. 2. C. 3. Thomas Edison's phonograph (his favorite invention) was patented on Feb. 19, 1878; the submarine, by John Holland, on Feb. 25, 1902. 4. True. The first fruit tree patent, for a peach tree, was granted to James Markham on Feb. 16, 1932. 5. D. President George Washington made the comment during his first State of the Union address on Jan. 8, 1790.

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