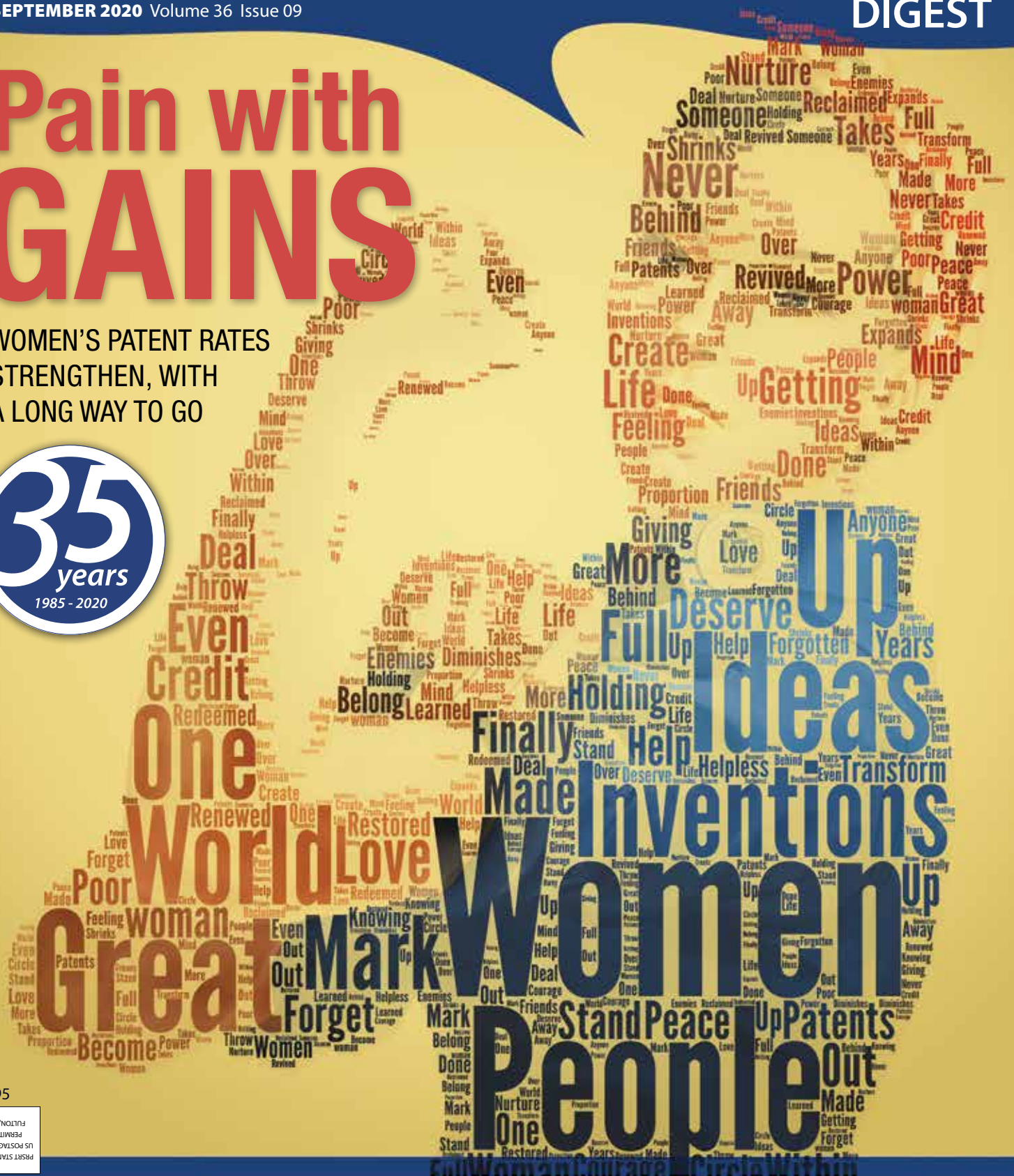
Inventors DIGEST

SEPTEMBER 2020 Volume 36 Issue 09

Pain with GAINS

WOMEN'S PATENT RATES STRENGTHEN, WITH A LONG WAY TO GO

35 years
1985 - 2020



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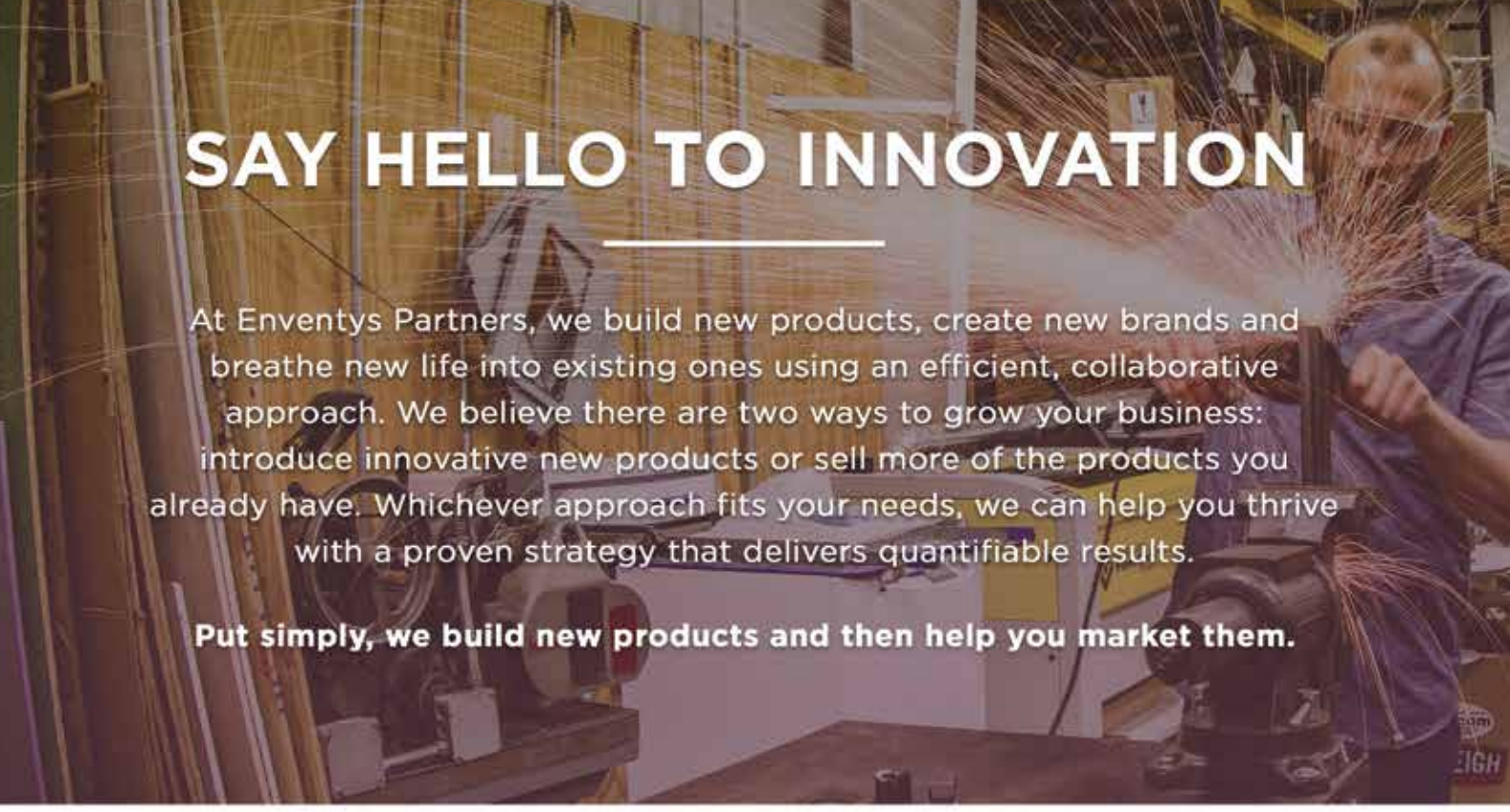

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Slight Progress —and a Slight?

Was Hannah Wilkinson Slater denied a historic distinction because of misleading wording on a patent? If so, that slight would typify the identity issues women have battled for centuries.

In the United States Patent and Trademark Office's February 2019 "Progress and Potential" report on women's participation rates in patenting —the forerunner to the recently released data in this month's *Inventors Digest* cover story—the patent office says there is uncertainty about the identity of the first U.S. female patent inventor. *ID* credits Mary Dixon Kies (see Page 35), generally acknowledged to hold this distinction because her patent was indisputably hers alone.

The USPTO wrote:

"Hannah Wilkinson Slater is often celebrated as the first woman to receive a U.S. patent. In 1793, she received a patent for a new method of producing cottonsewing thread.

"She was inspired in the mills run by her husband, Samuel Slater … Interestingly, the United States issued Hannah Wilkinson Slater's patent to "Mrs. Samuel Slater," which has created some ambiguity regarding whether she was indeed the first American female patent inventor."

This could be further complicated by the fact that her husband was an expert in textile mechanics. His mill reportedly produced the first cotton yarn made automatically in America.

Sadly but maybe not surprisingly, little has been reported about the life of Hannah Wilkinson Slater.

A Quaker known for her generosity to charitable causes, she was 16 when she married her then-23-year-old husband. She had 10 children—four died during infancy—and died two weeks after giving birth to the last one, in 1812. She was 37.

Even though the Slater Mill in Pawtucket, Rhode Island, is on the National Register of Historic Places, I couldn't find detailed information about Hannah Wilkinson Slater's contribution to the mill.

As we report on the limited but hopeful progress of female patentees in this issue of *Inventors Digest*, we remember (and imagine!) all the women who toiled in obscurity on important inventions with little or no historic renown. Here's hoping women's emergence as more of a force in the patent world will force a deeper examination into their unheralded role in shaping the face of invention.

—Reid
(reid.creager@inventorsdigest.com)

American innovation needs to hit the gym

Weakened patent protections have reduced the value of American inventions. To strengthen American innovation, support the STRONGER Patents Act—legislation designed to restore strong Constitutional patent rights, limit unfair patent challenges, and end the diversion of USPTO fees.

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SAVE THE AMERICAN INVENTOR

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Jorge Zegarra

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CORRESPONDENCE

Letters and emails in reaction to new and older **Inventors Digest** *stories you read in print or online (responses may be edited for clarity and brevity):*

Editor's Note: Our February 2018 article "Know Your Obstacles to Commercializing Your Invention" has prompted much recent discussion online, particularly as would-be and actual inventors navigate the harsh realities of the COVID-19 marketplace. Some comments:

One of the barriers is a weak business environment, which requires an extraordinary management of the project. —**ANISHA SURESH**

One of the biggest challenges to get my idea in the market is to gain the trust of the end users.

There are lots of similar companies selling their products at similar budget ranges and with near-equal qualities. So all of a sudden, it's very difficult for a new product to get to the marketplace.

Trust issues take long to build. No matter how new you are, people still run after the old stuff because they are attached to it. To change the mindset of the customers and make them believe in my new product is the most challenging task from a perspective of an engineer and technologist.

A standardized solution in this case never exists; but the best solution can be to go for a kind of trial and error to understand the preliminary needs of common people and work on that.

The end user's demands are random and dynamic. To keep a convergent idea is the toughest task. Those who can avail that will win the market race. —**DEBORSI BASU**

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Online:
Via inventorsdigest.com, comment below the Leave a Reply notation at the bottom of stories. Or, send emails or other inquiries to info@inventorsdigest.com.

91-YEAR-OLD LEADS CLEAN REVOLUTION

The years have been sneaking past **Solomon Rosenblatt**, while bacteria has "been sneaking up on us all the time."

Rosenblatt, a longtime chemist from Philadelphia who turned 91 on July 17, may be forever changing hygiene around the home and office. His "IoWipe," a small, black sponge cloth infused with the chemical element iodine, can last approximately 30 days and for up to 600 uses. Maybe Rosenblatt did not predict the widespread effects of COVID-19, but he told ABC News "I was not surprised that there would be a virus or a microbe that we are not familiar with."

His career began as a rocket propellant engineer before he became a power and life support chemist for the Apollo program in the 1960s. Fearing that astronauts could bring bacteria to the moon, he began looking at iodine's benefits.

He had to proceed carefully. Iodine poisoning can be serious, but in the proper doses—such as releasing small amounts over extended periods—it is useful to the body.

Rosenblatt eventually turned to protecting slow-healing wounds from strong bacteria. He invented an antimicrobial bandage known as IoPlex in the 1990s, which became the precursor to IoWipe.

The wipe is self-sanitizing until its jet-black color fades, but there is no sign of his product fading from public interest.

His family built a startup to sell IoWipes and sold thousands (at $25 apiece) in a few weeks. They quickly had to limit sales to two per customer; the next step was to find a partner to help produce the wipes.

The family is also making products such as sanitized doorknob covers, which supposedly last even longer than IoWipes.

Rosenblatt, who has 10 patents, has been working on inventions in his basement for decades.

"Being a Depression baby, I developed a certain mental attitude of survival," he said.

BRIGHT IDEAS

LUMI

ILLUMINATED KEYBOARD APP

playlumi.com

LUMI is a fully illuminated keyboard and interactive app that lets you play along to songs.

Everything is connected by light and color. Just follow the colors in the app and the lights on the keyboard, note by note. You can learn music fundamentals by playing and through fast and fun interactive lessons.

Snap two or more LUMI Keys together to expand the keyboard. The comfortable keys have 92 percent of the plunge distance of a grand piano key.

LUMI will retail for $249, with a planned October shipping date.

POSSIBLE DELAYS

Coronavirus-related factors may result in changing timetables and later shipping dates than companies originally provided.

LoCoMoGo Train

CODE-TEACHING TOY

locomogo.com

LoCoMoGo teaches children coding without the use of screens, using tape for the tracks.

The process starts by tapping the top of the red LoCoMotive car, which automatically follows the route designated by tape that's put down on any surface.

Each additional train car adds a new function and is programmable through the LoCoMoGo app. If there's green tape down, the car will accelerate; if there's blue tape down, the car's lights will flash.

LoCoMoGo has not provided an estimated retail price, but a basic kit had an early-bird price of $99 for Kickstarter backers. Shipping is planned for November.

Skadu

COMPACT SCRUBBER

hyperlychee.com

Skadu is a lightweight device that is said to powerfully scrub off dirt, grime and stuck-on burned food without any of the residue touching your skin. It scrubs most surface types.

The cleaner has a brush attachment and copper scrubber attachment; the front head is sealed and waterproof. Skadu comes with a drop-in design stand and has an app-controlled dashboard, community and store.

The battery gives you up to 90 minutes of fade-free scrubbing on a full charge.

Skadu will retail for $85, a package that includes 3 months of scrubbing pads. Delivery is set for April.

"Either write something worth reading or do something worth writing."

—BENJAMIN FRANKLIN

Wearbuds Pro

HI-FI WRIST AUDIO

myaipower.com

A second-generation TWS audio and fitness tracking wearable, Wearbuds Pro upgrades the original version following customer feedback. The earbuds pop out of the watch with a snap release.

To reduce false touches, Pro can control music and answer phone calls on the band via Bluetooth 5.0. The visualization avoids those false touches. The new matte finish metal case minimizes scratching. Pro can also be worn with short straps.

Wearbuds Pro will retail for $199 with an estimated November shipping date.

Awash in Mystery

WHO INVENTED HAND SANITIZER? DON'T BELIEVE THE INTERNET

BY JOYCE BEDI

Editor's note: This blog post from the Lemelson Center for the Study of Invention and Innovation is being reprinted in slightly abridged form with the permission of the author, an earlier contributor to Inventors Digest.

WHAT UNCERTAIN and anxious times. The worldwide spread of the novel coronavirus has altered lives across the globe. Even simple things that we usually take for granted now seem surreal.

When my husband and I ventured out for our first weekly trip to the grocery store after the pandemic was declared, I couldn't shake the disturbing feeling that the empty shelves evoked. Of course, there wasn't a single roll of toilet paper to be found, and we didn't even bother to look for bottles of hand sanitizer.

By now, many of us have read stories about the inventor of hand sanitizer, but until I was contacted by a reporter in March, I hadn't heard it.

The story starts in Bakersfield, California, in 1966, when a young Latina nursing student named Lupe Hernandez came up with a way to deliver a disinfecting alcohol solution in gel form. Since the reporter reached out, I've seen this story at least a dozen times in a variety of news outlets and blogs and on social media.

The most common source cited is an article published in 2012 in the British newspaper, *The Guardian*. It reads, in part, "[I]n 1966, a student nurse named Lupe Hernandez first dreamed up the idea of hand sanitiser. The story goes that Hernandez realised alcohol delivered through a gel could clean hands in a situation where there was no access to soap and warm water.

"Recognising the commercial potential of her idea, she duly called an inventions hotline ... and set about registering the patent."

The reporter wanted to know if the story was true.

Apparatus patents

It isn't unusual for the Lemelson Center to field requests like this. There is a great deal of incomplete, misinterpreted, or, frankly, wrong information online and in print about the history of invention and about inventors, past and present.

An incorrect story that appears in a trustworthy source is often perpetuated by others, without further research. We try to find the facts and tell the stories as accurately as we can, understanding that we, too, may need to revise how we describe an inventor's work as new information becomes available. Honestly, doing this sort of "detective work" is a highlight of being a historian.

So I began by searching for a patent issued to Lupe Hernandez (or several variations of the name), but I didn't find any. I did discover patents for hand sanitizers from roughly the same period, but those covered apparatuses into which one would place one's hands for sanitizing.

For example, Lincoln L. Stevenson received U.S. Patent 2,814,081 for a "Rapid Hand Sanitizer," which he described as "a device for quickly and efficiently rendering the hands sanitary."

Stevenson primarily targeted the food service industry. His hand sanitizer took the form of a glass box with two openings at the front, through which the user would insert his or her hands. Inside the box, hands were subjected to "an electrically operated fine spray device and a hot air blower-drier" for cleaning.

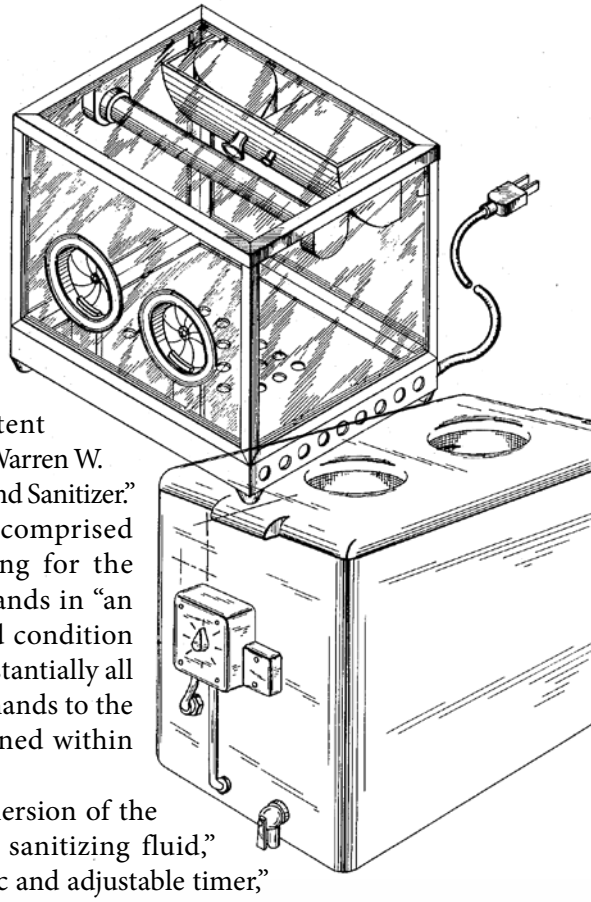
The spray would be a "compound including lanolin, pure grain alcohol, perfume, and possibly a slight amount of additional disinfectant added if necessary." The whole process was intended to take "a very few seconds" to complete.

Similarly, U.S. Patent 3,220,424 was issued to Warren W. Nelson in 1965 for a "Hand Sanitizer."

Nelson's invention comprised a box with an opening for the insertion of a user's hands in "an open and outstretched condition whereby to expose substantially all of the skin area of the hands to the sanitizing fluid contained within the receptacle."

The "complete submersion of the person's hands in the sanitizing fluid," regulated by "an electric and adjustable timer," provided the necessary sanitizing.

Although these inventions are indeed hand sanitizers, they weren't the targets of my search, and so far, I hadn't identified any patents issued to Lupe Hernandez or for the gel-type hand sanitizer.



Top: Lincoln L. Stevenson received U.S. Patent 2,814,081 for a "Rapid Hand Sanitizer" in 1957.

Bottom: U.S. Patent 3,220,424 was issued to Warren W. Nelson in 1965 for a "Hand Sanitizer."

The elusive Lupe Hernandez

It seemed as if the patent part of the story might be mistaken.

And perhaps, so was the identification of Hernandez as a woman. Other articles referred to Lupe Hernandez as a man. Could I at least

EARLY PATENTS

Certainly, the idea and chemistry behind a hand sanitizer has been around for a while; here's a small sampling of patents for different germicides and the like:

Wendell H. Tisdale and Ira Williams, U.S. Patent 1,972,961, "Disinfectant," 1934, describes "methods and means of controlling and preventing growth of fungi and microbes."

William C. Moore, U.S. Patent 2,054,989, discusses "Compositions for Application to the Skin," 1936, for "a new kind of predominantly alcoholic composition for application to the human skin." This patent is particularly interesting because Moore mentions that "it has long been known that 'alcogels' can be made." (And, indeed, U.S. Patent 899,875, issued to Hans Kuzel in 1908, specifically mentions "alcogels.") Moore's new form of alcohol in "non-liquid form," however, wasn't intended to be used as hand sanitizer but instead as an easier-to-apply rubbing alcohol compound for massage and other therapeutic uses.

Lucas P. Kyrides, U.S. Patent 2,246,524, "Germicide," 1941, details compounds that are "eminently suitable for washing textiles, rubber goods, walls and floors and especially for washing hands and skin."

UPDATE (MARCH 26, 2020)

From the author: Bethany Rice, the curator at the Kern County Museum in Bakersfield, California, read our blog and let us know about her research on Lupe Hernandez. Here's an excerpt from her email, reprinted with her permission, and with our thanks:

Good afternoon,
I am the curator with the Kern County Museum, which is located in Bakersfield, CA. I have also been contacted several times regarding the story of Lupe Hernandez and the invention of hand sanitizer, however I have also not found any corroborating evidence that he/she existed.

I have reached out to Bakersfield College, where she (he?) could possibly have been a nursing student, but have not come across any evidence of this person in the yearbooks thus far. Nor have myself or a volunteer of mine been able to find any newspaper evidence.

Sincerely,
Bethany Rice

confirm that part of the story? I searched city directories and other databases, but without more information I didn't find anything conclusive; Lupe Hernandez is too common a name.

I thought that I might have found a clue when I read an obituary for Lupe G. Hernandez, a woman who was born in 1949 (her age could possibly fit the story) and passed away in Torrance, California, in 2007. Someone had left a note in the online guestbook: "Thank you for hand sanitizer. It helps a lot of people be germ free!"

The entry, however, was made in 2019, a dozen years later. That seemed a bit suspect to me.

I continued searching and found a note on Answers.com, purportedly written by Hernandez and posted in 2012, in answer to the question "Is Lupe H Hernandez inventor of hand sanitizer still alive?"

The following is a direct quote from the Answers.com page: "Yes, and it is a male, I gave my idea to a CEO of (an) idea company and am still waiting to get credit. I can prove that it was my idea of how I explained it and how its (sic) made." —Lupe Hernandez BKSLFD,CA. 93313

Had I finally found the truth? Was Lupe Hernandez a man, still living in Bakersfield eight years ago, who had never patented or, presumably, profited from his invention?

I still have doubts. The Answers.com "general disclaimer" opens by stating there is "no guarantee of validity" of the information on the site, so I can't say with any degree of certainty that the above is correct, or even written by Hernandez.

I'm sorry that I couldn't give the reporter (or myself) a definitive answer (yet). I'll keep searching. If anyone reading this has further information on Lupe Hernandez and the invention of hand sanitizer, please do let us know by emailing lemcen@si.edu.

In the meantime, stay safe, stay home, stay healthy, wash your hands frequently … or use hand sanitizer, if you can find it.

Celebrating its 25th anniversary in 2020, the Lemelson Center continues to lead the study of invention and innovation at the Smithsonian. The center's activities advance scholarship on the history of invention, share stories about inventors and their work, and nurture creativity in young people. The center is supported by The Lemelson Foundation and located in the National Museum of American History. For more information, visit invention.si.edu.

Joyce Bedi is the senior historian at the Lemelson Center. She is responsible for the center's scholarly publication program and website, and assists with the development of scholarly programs and exhibitions.

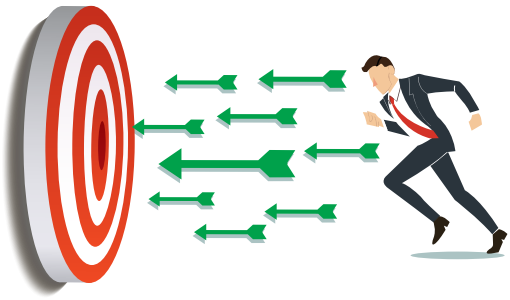
INVENTOR ARCHIVES: SEPTEMBER

September 28, 1979: The pilot episode of the TV series "M*A*S*H" was copyright registered, according to thoughtco.com—seven years after it debuted. The series ran until 1983.

"M*A*S*H" derived from the 1970 film adaptation of the original novel by Richard Hooker in 1968, "MASH: A Novel About Three Army Doctors." Now M*A*S*H (Mobile Army Surgical Hospital) is a media franchise owned by 20th Century Studios.

The iconic Bell 47 helicopter from the show recently was put up for sale. It was the first helicopter certified for civilian use, on March 8, 1946.

How to Target a Customer Group



PEOPLE WITH SHARED PASSIONS CAN INCREASE INVENTORS' CHANCES OF SUCCESS **BY DON DEBELAK**

INVENTORS OFTEN RUN into fierce resistance with their ideas because they have chosen a difficult market. Inventors can often do far better if they home in their creative talents on a target customer group.

Passionate pursuits: Try to find a group that is passionate about one activity.

People who want to grow organic vegetables in their garden would be one group. Or women who want to make cute dresses for their grandchildren.

Golfers are passionate about their sport. So are hunters and fishermen. Typically, though, the larger the group, the higher the level of new product activity.

For example, there are dozens of new golf products every year. Finding a passionate group with a smaller number of people often offers inventors a better chance of introducing a new product because there is less competition.

Start by looking at your own activities to see if you are already a smaller, passionate group. If not, you can often find a smaller customer group. Start telling people you contact that you are looking for a new area of interest and that you wondered if they have any hobbies or outside interests.

Join the club: Become immersed in the customer group, the activities the group likes to pursue, and start to understand its problems and needs.

Your new insight into activities the target group enjoys may lead you to discover things these people do that don't make sense or need improvement. You may also notice that certain tactics used to perform tasks are inefficient. These areas could be ripe for an invention.

You can learn how people solve their issues or problems, and which competitive products are used to solve them. That understanding can help you develop a better product, especially when you learn why the customer group believes those other products aren't right for them.

Solving big problems is key: Your target customer group must consider the problem you are solving is important. These people may be well aware of a problem that causes issues, or they might immediately grasp that your idea is helpful when you show it to them or discuss it with them.

This is a crucial point. Products that don't solve important problems, or don't provide a lot of appeal to customers, are very hard to sell.

Provide visual aids: Inventors often have been thinking of their idea for a long time and can easily visualize it. People inventors talk to when the inventors are ready to disclose their idea cannot visualize the idea in the same way.

Have a visual aid ready when you seek feedback. A prototype or 3D model is the best option, but if that is too expensive make up visual renderings to show people.

Monitor resources: As you go through any invention process, always ask yourself if your resources are adequate to get the product off the ground. Financial resources are one consideration, but so is help with engineering, prototype production and design.

Hiring outside experts is expensive, so the more help you can gather the further you can stretch your resources.

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.

Finding a Prototyper Amid Covid-19

DIY GENERAL CONTRACTORS WILL FIRST NEED SPECIALIZED SOURCES OF SUPPLY AND RELIABLE PRODUCTION PROCESSES

BY JACK LANDER

WHAT'S DIFFERENT about job-shop vendors during this trying time?

Factors such as these:

- Many small- and medium-size businesses are closed, or even out of business permanently. This may be true of prototypers who previously had been able to work with your instructions and sketches, and produce a complete prototype.
- Small businesses that have been able to stay open may be more eager to accommodate small orders.
- Vendors who previously were not interested in business from inventors may welcome us now. (Inventors have been known to be difficult to work with because they don't present an adequate description of what they want, such as material, dimensions, shape, details, etc.)
- New-product development from all sources may be at a low level, and prices may be more competitive than in non-recessionary times.

Let's assume you will act as your own "general contractor," and will require two or three specialized sources to complete your prototype. The first step is to settle on the production processes for your eventual product.

For example, if you decide that the main component of your product will be molded of plastic, it makes sense to seek a prototyper who specializes in prototype methods that simulate a plastic injection-molded part. These methods have become popularized by 3D printing in the past few years, which has taken away much of the business formerly held by processes such as stereolithography and selective laser sintering—all three known as material *additive* processes.

Using any of these processes is not absolutely necessary; a plastic part usually can be machined by a material *removal* process, such as a milling machine, lathe, drill press, or machining center. But if your product will end up in the hands of a potential licensee, you'll want it to look and feel like the eventual product. Therefore, it pays to know the characteristics of the work produced by the various processes.

It also helps to know where to buy the raw materials and hardware that you may need to produce your prototype.

Supplying raw materials to the vendor has a couple of advantages: A vendor doesn't bill you for the time spent obtaining the material. Also, you learn about standard stock sizes and the characteristics of materials, especially of alternative materials. You are also entitled to claim any material left over from each job.

Favorite supply source

So, let's start with sources of supply.

My favorite is McMaster-Carr, no doubt the largest hardware store in the United States and Canada. (Sorry to interrupt, but you'll thank me. Put down your *Inventors Digest*, sit down at your computer, and key in mcmaster.com.)

McMaster offers not only almost any conceivable material or "hardware" item; it has it in stock, and delivers quickly.

You're looking at the opening page of its immense catalog, right? As you scroll down about nine categories, you'll come to "raw

Supplying raw materials to the vendor means you won't be billed for time spent obtaining the material, and that you can learn about standard stock sizes and the characteristics of materials.

materials." (This may take some time because if you are like my wife, Mary, who loves to look at all this "man" stuff, you'll be fascinated.)

Now, click on "plastics." When you land in this category, click on "sheets and bars." I counted about 70 entries, all having a few words that will guide you to popular plastics such as polypropylene.

If you click on that, you'll be dazzled by the options for thickness and size for sheets. TMI, you might say to yourself: But too much information is far better than too little.

Polypropylene, by the way, is one of the most popular plastics for general use. It is used for products ranging from small hinges to lawn furniture as large as a table.

You don't have to guess which of the many choices of plastics and their variations to use for your prototype, Amazon sells a book, "User's Guide to Plastic," by Ulf Bruder for less than $40.

The right choice is important, especially if you intend to produce and sell. And I haven't found any vendor, even plastic injection molders, who are experts on the characteristics of plastics other than the six plastics from which about 90 percent of all plastic products are made.

Suppose your invention will have sheet metal parts. Most precision sheet metal vendors have a stock of steel and aluminum in various thicknesses.

Cold-rolled steel comes in hardness ranges from the most popular 1010 to spring metal, 1095. Aluminum has a range of hardness from soft to aircraft frame.

If you don't specify, you'll get the most common type—and that's probably OK for a prototype. But when you produce for customers, you'll want the one that offers optimum characteristics for your product.

The internet may have helpful information on materials, but it requires patient searching.

Processing

Processing of your materials is the other main need for creating a prototype. Most products use plastic, and there are several fabricating methods from which to choose.

The two basic choices are material removal and material addition. Removal means starting with a piece of plastic (block, sheet, rod, or tube), and cutting away the material that is not wanted. Imagine a sculptor beginning with a block of marble and chiseling a bust of Lincoln.

Removal is usually done by a machine such as a milling machine, lathe, or drill press, each

Machinable wax makes an excellent model for mold making. It needs no mold release, which most other materials need to prevent the mold rubber from sticking to the model.

of which may be "standalone" and operated manually by a machinist. Machining centers combine these machines, and are controlled by a computer program.

Two other machining processes are laser cutting and abrasive water-jet cutting—either of which can be used to cut sheet metal. The water-jet is better for cutting sheet plastics. These machines are video demonstrated on youtube.com.

Material removal is increasingly replaced these days by the additive processes, which offer two main advantages: no scrap (removed material); and no practical limit to the shape. A radical example would be a hollow sphere, which could be made easily using 3D printing.

It is impossible for material-removal machining to accomplish such a configuration. Undercuts and irregular shapes are easy for the additive processes, and often very difficult and time consuming (if possible at all) for the removal processes.

Try machinable wax

Before 3D printing was developed as a standard process, even for production parts in many cases we had stereolithography, selective laser sintering and the Z process—which together were known as "rapid prototyping." This term is fading away because of the utilization of the 3D printing process.

One of the limitations of this process has been the selection of materials with special characteristics such as strength, resistance to certain chemicals, ability to withstand heat, etc. But for most prototypes, there is a material that is close enough to the ideal. Check out simplify3d.com/support/materials-guide/ for an advanced introduction to the characteristics of plastics available for 3D printing, and plastics in general.

Another possibility for a handy inventor is the molding of various plastics in a silicone rubber mold. The process begins with a model of the part, which is used to make the silicone rubber mold. The model can be wood, Ivory soap, machinable wax, or even a plastic part produced by any of the shaping processes.

One of my favorite materials is machinable wax. I've never machined any, but I have sawed it into pieces with a hacksaw blade, hand-formed it, carved it with a knife, and even welded pieces together with a soldering iron. It makes an excellent model for mold making; it needs no mold release, which most other materials need to prevent the mold rubber from sticking to the model.

The model is then cast halfway up using a silicon rubber or another mold material. When the first half is cured, the second half is cast on top of the first half.

When cured, you have a two-piece mold into which you can mold two-part liquid urethanes that range in hardness from rubber to acrylic. The urethane cures similar to common epoxy, usually in a couple of hours. Most molds are good for about 50 cold-molded parts using Part A and Part B liquid urethane.

More book suggestions

A very well-written catalog instruction course is available free from Polytek Development Corp.,

800-858-5990. Check out its website at polytek.com. Click "applications," then scroll down to "model making." Prepare to spend time on this site. It's fascinating.

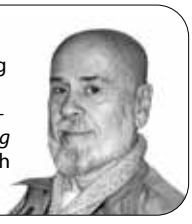
One of the shortcomings of many inventors is not having a basic understanding of how to communicate with a CAD draftsperson. Ideally, you should present sketches that are so complete with proper views and dimensions that the final CAD drawings are nothing more than a neat digital version of the part we want, plus digital data that can be used to drive automatic machines.

In order to accomplish this, you need to know how the old T square and triangle drafters created their drawings. This is simple stuff, but if you don't sketch using the conventions in the trades, you are likely to have problems.

Order a book titled "Everyday Sketching and Drafting" by Joseph Giachino and Henry Beukema. A used copy can be yours for around $6. It takes about an hour to grasp the conventional views that are demanded by CAD drafters, prototype makers, machinists and job shop producers.

Once you have CAD drawings, dealing at a distance from your vendors is fairly trouble free. ISo, stay safe. Have fun as your own general contractor. And although I don't do any prototyping other than my own, I'll answer a question or two via email.

Jack Lander, a near legend in the inventing community, has been writing for *Inventors Digest* for 24 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.



No Ad Budget? Try LinkedIn

4 STEPS TO HELP YOUR INVENTION BUILD EXPOSURE THROUGH POPULAR BUSINESS NETWORKING SITE **BY ELIZABETH BREEDLOVE**

REGARDLESS OF which industry you're in or the category of your invention, you're poised to provide a unique perspective based on your experience.

If you're looking to get more exposure for your inventions or your inventing company, LinkedIn is a fantastic place to share your expertise and get more eyes on your invention without necessarily needing to spend money on advertising. Just follow these four steps:

1 **Begin with a good LinkedIn profile.** Think of your LinkedIn profile as a combination of your resumé and a place to make a great first impression. Use this space to show that you are experienced and knowledgeable, and that you can be trusted to provide valuable, insightful commentary, opinions and advice.

As you're creating or editing your profile, make sure you're optimizing keywords—especially in your professional headline and About section. You want those who are searching for people with your experience and expertise to easily find you.

2 **Connect with people interested in your area of expertise.** As you peruse LinkedIn, look for opportunities to connect with people who are interested in the same things as you. Your goal is to network with like-minded people who are likely to find your posts interesting. There are many ways to go about this:

- Search for and join relevant LinkedIn groups and connect with people there. To find quality groups, click the search box at the top of your LinkedIn dashboard, and enter a keyword or two related to your area of expertise. In the dropdown, you should see an option for "[your keyword] in groups"; click this to find groups related to your keyword.

As you're creating or editing your profile, make sure you're optimizing keywords—especially in your professional headline and About section.

- Follow hashtags related to your area of expertise to find people posting about the same things as you.
- Similarly, use 3-5 hashtags in your posts so other people can find you. Use a broader hashtag, such as your industry, and a few more narrow ones that are more specific to your content. Include these hashtags at the end of your posts.
- Make sure you aren't just connecting with people but interacting with them. You need to engage with the content they post if you expect them to do the same for you. Make this a habit; don't just comment on their post right after you connect, but keep the feedback going.

3 Post high-quality content that encourages interaction. Generally speaking, social media algorithms consider how much interaction a user's posts get, especially in a short period, and how individuals engage with the user's content specifically to show each individual content that will likely prompt an interest.

In other words, your posts are most likely to be shown to users who engage with your content, and they are more likely to be shown to more users if they have a large amount of valuable engagement—such as lengthy comments. The algorithm also appears to prioritize users who post regularly and consistently get feedback on most of their posts.

So, how can you create good content that the algorithm will prioritize?

- Ask open-ended questions. Rather than questions that have a simple "yes" or "no" answer, ask something like, "What books have you read lately?" or "How is your company adjusting to the new normal with COVID?"
- If you really want to up the ante and create a place for debate, post about an unpopular opinion you hold and encourage people to leave their thoughts in the comments. Remember to keep things kind and civil.
- Make sure you are mentioning other LinkedIn users where appropriate, especially if they're likely to leave a comment. For example, if you are sharing an article or blog post, tag the person who wrote it.
- Good content is always easy to read. Use white space, and break up any overwhelming blocks of texts. Feel free to use emojis if you'd like, but make sure you stay authentic; if emojis don't fit your personality or your brand's personality, skip them. Creating content that encourages engagement, helps others get to know you and your brand and positions you as a thought leader is far more important than having fun with emojis.
- Ask your team members and employees for help! If they are up for it, have them like, comment on and share your content as soon as possible after you post it.

4 Analyze and adjust continuously. Never assume your strategy is working, even if it has worked in the past. Social media platforms update their algorithms all the time, and on top of that, people's interests and experiences are constantly evolving, Just because someone was interacting with your content a year ago doesn't mean that is happening now.

Fortunately, LinkedIn makes it easy to analyze your posts' performance. Just navigate to your own profile, then scroll down below the About section to get valuable insights about your posts' performance.

Your key takeaway: if you're willing to put in the time to use your LinkedIn profile well, you have a great opportunity to get more exposure for your brand without paying for ads. Organic traffic can be more difficult to get than paid traffic because it requires more effort, but the payoff is that it's completely free and often of higher quality.

Elizabeth Breedlove is a freelance marketing consultant and copywriter. She has helped start-ups and small businesses launch new products and inventions via social media, blogging, email marketing and more.

'Oh, Yeah, I've Heard of That'

OTHERS' UNBIASED OPINIONS REMAIN A PROVEN INFLUENCER FOR BUYING PRODUCTS—LIKE YOUR INVENTION **BY ALYSON DUTCH**

TOO MANY INVENTORS and entrepreneurs, finding their customers is a mystical question. But it's very simple: Consumers often buy products with a reputation, things they have heard about before.

Humans are like baby ducks; they always follow the leader. Following others is ingrained into our biological nature, regardless of how sophisticated marketing techniques become or in what time we live.

Model Y? Here's why

I was inspired to write about this when I witnessed a poignant demonstration that had to do with the newest Tesla and an antiquated thing called a newspaper.

My boyfriend, a Harvard MBA-trained businessman who is an avid *Wall Street Journal* reader, announced one summer afternoon that he had gone to the local Tesla store and ordered the new Model Y.

I smiled and said, "Wow. Did you? What made you decide so suddenly? I thought you loved your old car and wanted to drive it until it died."

His response was that Dan Neil, who writes the car column for the *WSJ*, said it's possibly the world's best car.

The Porsche SUVs grabbed his attention, and he started commenting on them. Though he brought up the SUVs about a dozen times, he snuggled back into the comfort of his trusty VW Touareg.

He had never even uttered the word Tesla, but he was clearly teetering toward the need for a new car. What he repeatedly said was that his current car would be the last he owned until his hope for self-driving vehicles becoming the norm came to fruition, taking away his need to drive anywhere at all.

Then, another demonstration happened: One of his friends told him that the Model Y was having odd issues.

The bumpers were falling off and Tesla wasn't doing a great job of fixing them quickly or well. He stumbled upon another article in his trusty WSJ that parroted the same problems.

He called the salesperson at Tesla to inquire and got no response, or even an explanation for how Tesla was addressing these problems.

You have probably guessed what came next: yep, a decision to not buy the Model Y.

Paid bias doesn't count

Witnessing this, I thought: "Holy cow! It's 2020 and a $65,000 dollar purchase decision is being made as the result of a writer's opinion, two newspaper articles and a rumor whispered from a friend."

Of course as a publicist, I wasn't surprised; I've made a living creating this exact process for product companies for 30 years.

I call this following of opinions the "Oh, yeah, I've heard of that" response.

The opinion of your friend on Facebook or a trusted columnist you read in the WSJ is the same thing. It's called word-of-mouth marketing.

That said, an influencer showing you how to do smokey eyes with a certain branded eyeshadow on YouTube or posting a picture in a club wearing Versace on Instagram does not

©PIXEL HUNTER/SHUTTERSTOCK

have the same effect. Why? Because influencers are *paid* to sway followers.

People can smell the difference between biased and unbiased "opinions." Consumers, simple creatures that they are, are also sophisticated in that way.

Continuing the Tesla example: If my boyfriend had seen one of his fellow Harvard MBAs who had suddenly become a Wall Street influencer, he'd probably laugh and say: "Wow, that guy really sold out" and "Do people really trust this guy?"

He would then discuss this with all his HBS friends, and the rumor would spread throughout their trusted ring of friendship. Next time someone in that group saw an ad served up on LinkedIn from that influencer, they would think/say: "Oh, yeah, I heard about that guy" —and the not-so-nice opinion of him would further spread.

Word of mouth can shine light on something/someone in a positive or negative way.

26 percent? That's all?

The human behavior of following the leader or being influenced by others' opinions has been a topic of conversation for many years. In his book "The Tipping Point," Malcolm Gladwell contemplates the idea.

He concludes that a tipping point is when a trend or idea crosses a threshold, causing it to "spread like wildfire."

The opinion of your friend on Facebook or a trusted columnist you read in the Wall Street Journal is called word-of-mouth marketing.

Recently, I heard some science on "the tipping point" that exploited what exact percentage of a group it takes to get buy-in to something new. It was part of a story on National Public Radio about schools and racism.

Minority-based schools were trying to woo parents in an attempt to get a larger percentage of white students to transfer over. Once the schools had 26 percent white students, more began to follow.

Once 26 percent of people go in one direction, the rest will follow.

Twenty-six percent!

Think about that percentage and pay attention to where this ratio happens in your life and in your business. Plan your own marketing around opinion. It is the most powerful impulse of humans—and consumers.

Alyson Dutch has been a leading consumer packaged goods launch specialist for 30 years. She operates Malibu-based Brown + Dutch Public Relations and Consumer Product Events, and is a widely published author.

Golfers Get Help for Their Soles

MAN'S INVENTION TURNS SNEAKERS INTO CLEATED GOLF SHOES

BY EDITH G. TOLCHIN

Tyler Stuart, John Krosky and Matt Mockus (left to right) co-invented Golfkicks.

I LOVE watching "Shark Tank." After all, since 1997 I've been working with inventors who are trying to become successful entrepreneurs, so what's not to like?

Here's a versatile sports apparel accessories invention recently featured on the show that was designed for golfers who would rather not buy those hokey cleated golf shoes. Golfers can modify a favorite pair of rubber-soled shoes or sneakers at home with Golfkicks.

I spoke with Tyler Stuart, who co-invented Golfkicks with Matt Mockus and John Krosky.

Edith G. Tolchin (EGT): Tell us how this idea came about.

Tyler Stuart (TS): We noticed that most golf shoe options were boring, except for some very expensive and limited releases that Nike-Jordan were doing.

We started talking to people at golf courses, and the consensus was everyone had a golf shoe complaint on some level—whether it was fashion, comfort, orthopedic needs, size, and so on. So why not let them add golf traction to their street shoes?

EGT: Tell us about the three people at the helm.

TS: Founders are: Matt Mockus, expert garage tinkerer and customer service guru (and Ty's buddy from growing up in Iowa); sales, finance and 50-handicapper John Krosky, who we've known forever through the digital media business; and the creator of the Sushi Roll® rollable tackle box by Fishpond USA, Tyler Stuart. We all live within a mile of each other in Denver and have been hitting the muni golf courses together for years.

EGT: From what materials are Golfkicks made?

TS: Our latest version (fourth generation) is a metal shoe anchor that's shaped like an auger you'd use to drill your hole for ice fishing. This anchors the golf cleat into your rubber sole. Then, we over-mold it with a hard rubber cleat that feels great on the course or even in the grocery store after your round.

EGT: Where are you manufacturing? Any obstacles you may have encountered in bringing the product to market?

TS: We have an exceptional design partner in Newport Beach, California, called *ANDesign*. They help orchestrate design and manufacturing and we have a local fulfillment partner in Denver, so it's a combo of California, overseas, and Colorado.

EGT: Were you satisfied with your experience on "Shark Tank"?

TS: We had an absolute blast with the "Shark Tank" folks. They saw us on Instagram, reached out (we thought it was a prank call), and we kept the whole thing lighthearted and fun—which is reflective of the idea—so we could just be ourselves.

They have a potent combination of business savvy and entertainment in their DNA, so we learned a ton while being put on the map as a brand and product. You can see us on Season 11, Episode 5.

PHOTOS COURTESY OF GOLFKICKS

EGT: Are Golfkicks safety tested? Also, if a consumer applies them incorrectly, what disclaimers do you include in the packaging?
TS: My 10-year-old nephew, Johnny, can properly mount up a pair of shoes in five minutes with a power drill, but he's pretty handy.

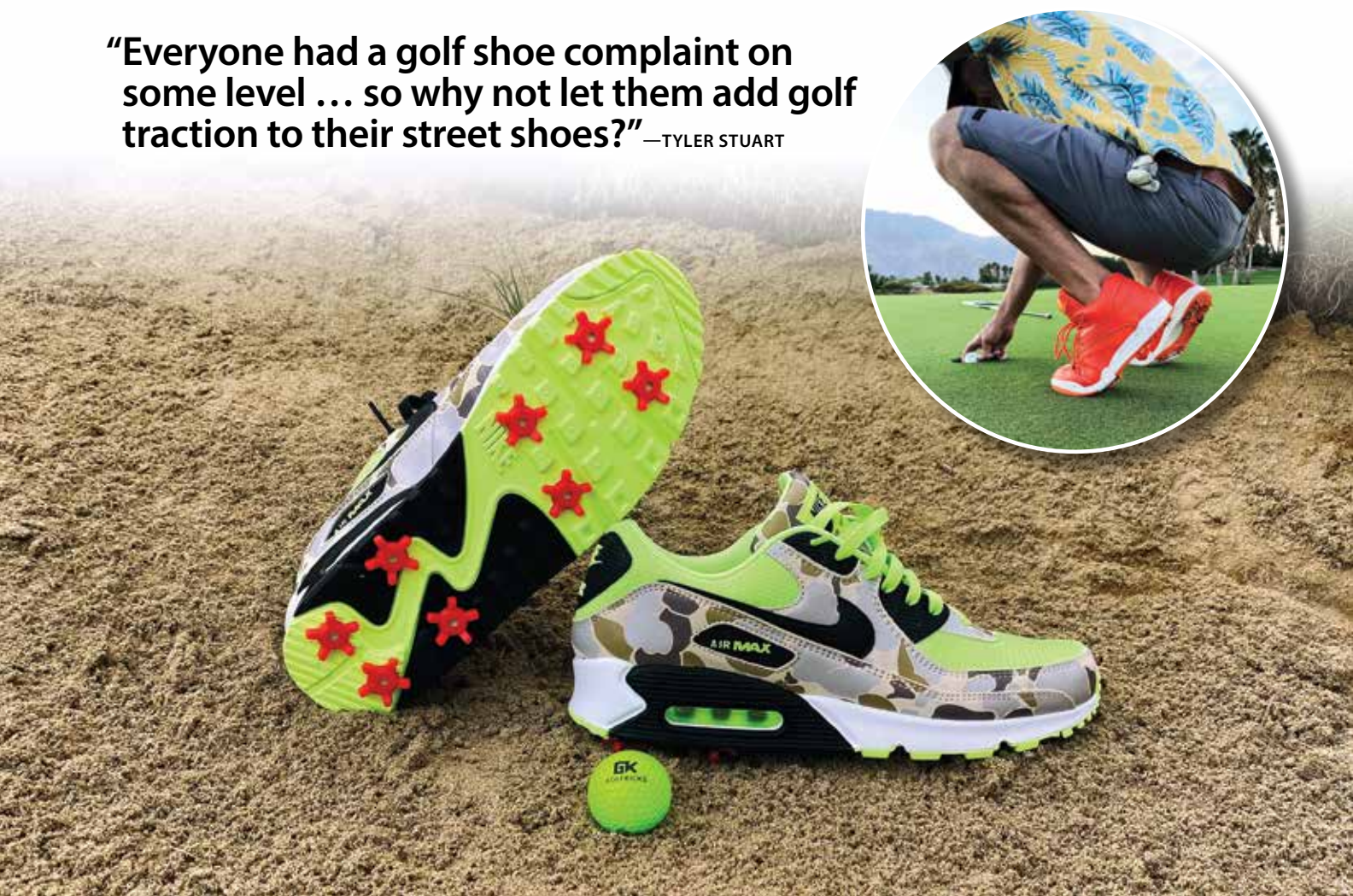
Golfkicks add phenomenal traction for navigating a golf course and hitting a golf ball. Millions of people play golf in street shoes or "spikeless" golf shoes, and properly mounted Golfkicks grip much better than both. We've sold tens of thousands of Traction Kits, so we hope we make the golf course a safer place.

Mounting Golfkicks is a do-it-yourself project, and the combinations of chosen sneakers and customer skill levels are infinite. So, we do our best to provide guidance on our website through text, photos and videos. We encourage creativity, have a disclaimer to keep the lawyers happy, and have personally guided hundreds of customers through installation when they need help.

EGT: How are Golfkicks sold?
TS: We sell Golfkicks Traction Kits on Golfkicks.com, recently launched on Amazon Prime, and are experimenting with like-minded retailers. So far, we've partnered up with Malbon Golf in Los Angeles and South Korea because we like their style; Manor Phoenix, which is more of a skate and sneakerhead shop than golf shop; and Clubhouse Golf Supply in Japan. All these people and places have a street-skate-surf vibe and are big on making golf more accessible.

EGT: Please share your patent process.
TS: Ty had done this once for his consumer product for fly fishing, the Sushi Roll. This helped, and we did the same thing for Golfkicks—a napkin

"Everyone had a golf shoe complaint on some level … so why not let them add golf traction to their street shoes?"—TYLER STUART



Golfers can modify a favorite pair of rubber-soled shoes or sneakers at home with Golfkicks.

Each Traction Kit comes with 20 spikes, a few ballmarkers, a Sharpie, an install-driver tool and a hex insert bit.

sketch provisional patent—and then we got real IP attorneys to help do it right on the non-provisional patent. Most existing patents around footwear traction involve an attachment system on the shoe-side, and ours must work on almost any sole.

EGT: How many different styles and colors do you feature, and what is the pricing?

TS: Seven colors, one style, and we're working on a multi-sport version to expand beyond golf. There are 20 spikes in a Traction Kit, a few ballmarkers, a Sharpie to map out your traction, an install-driver tool and a hex insert bit in case you want to use a drill. All of this for the low price of $32!

EGT: Are you adding new products to your line?

TS: Yes. We're working on some new traction shapes for field sports, hiking, trail running, military, gardening, and anywhere you might want extra grip.

EGT: Do you have any insights about product development to share?

TS: Go with your gut and heart in the beginning, and the second you start hearing feedback from potential and real customers, LISTEN!

Details: Golfkicks.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.

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Smart Move

DIGITAL CHESS BOARD ALLOWS WORLDWIDE PLAY, MAINTAINS GAME'S TACTILE FEEL

BY JEREMY LOSAW

With Square Off, you can play against a remote user or play against the board itself.

BHAVYA GOHIL knew he wanted to help blind people, but eventually he saw that his game product had even broader possibilities.

When he was a university student in India early last decade, the National Association for the Blind in Mumbai proposed a project to find a way for blind people to play chess against an artificial intelligence opponent. It is difficult, if not impossible, for blind people to use an app and often difficult to physically bring two people together for a game, so the challenge was significant.

Gohil knew how to play chess from casual games as a child but was by no means an enthusiast or chess pro. However, it was such an interesting technical challenge that he could not resist, and he and his colleague Aatur Mehta got to work.

The eventual result was Square Off, a chess board that can move pieces automatically. The main surface of the board is made from wood, giving it a warm and classic feel, but it has a mechanism hidden underneath that can move pieces to where they are commanded.

This allows for many different types of remote game play scenarios. A player with a Square Off board can play against a remote user who controls their pieces via the Square Off app, or both players can have a Square Off board and simultaneously play the same game in different parts of the world.

If you don't have a partner, Square Off has artificial intelligence with 20 different difficulty levels so you can play against the board itself. It also has an integration with chess.com so you can pair with a human opponent.

Early momentum

Despite the depth of the challenge, the first prototype of Square Off came together in a few months. Gohil and Mehta used an Arduino for the controller and built the board from a mixture of laser-cut and 3D-printed parts.

The challenge was magnified in part because no one had ever created a gameboard with automated pieces before. "We did not have a reference to follow. We had to completely make it from scratch," Gohil said.

The two showed the prototype to the National Association for the Blind and got a great reception. This led to an opportunity to show off the prototype at Maker Faire in Italy. Attendees engaged with the product, especially children who thought that the pieces were being moved by wizard magic.

Gohil and Mehta realized the product had broader possibilities.

"Why just for visually impaired people? We thought, 'Why not for everyone?'" Gohil said. So they tweaked their strategy to develop the product for a more general audience.

That thinking meshed with good timing. The expansion of the digital world has changed the

PHOTOS COURTESY OF SQUARE OFF

way people play board games—which have had a resurgence in popularity since the COVID-19 pandemic.

Whereas people used to get a game from a closet and assemble all of the players in the same room, now you only need an app or access to a web browser to challenge your friends. This allows for more opportunities to play our favorite games; however, the tactile experience of analyzing a board and moving the pieces has been lost.

This tactile experience is especially crucial in classic games such as chess, where engagement with the pieces is central to the experience. Square Off's chess board combines digital and physical game play to preserve this important element.

Growing funding

After completing university in 2015, Gohil and Mehta continued the game's development full time.

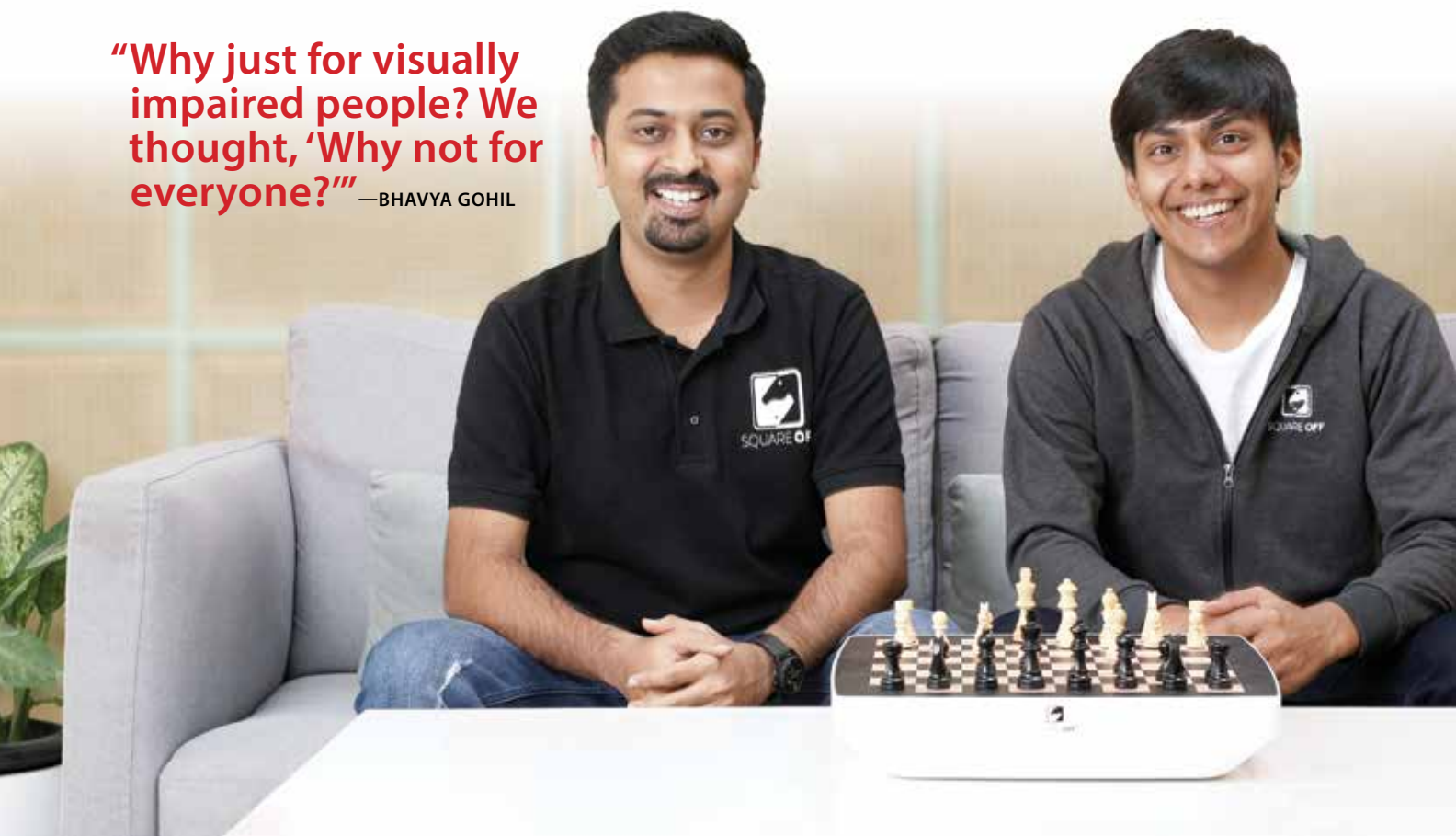
"The main challenge ... was to make a highly precise machine that goes into a wooden handcrafted body," Gohil said. "We wanted to design it in such a way that a 6-year-old or a 60-year-old could actually operate the product."

As they worked through their prototypes, they entered Square Off in tech competitions and used the prize money to put it back into development.

Because they ran a startup, they were always looking for funds. They decided to make 10 of the boards and sell them for $1,000 each to raise enough money to continue to and work toward larger-scale manufacturing.

As fate would have it, some of the first boards they sold were to people who became angel investors. The infusion of cash and enthusiasm for the product was just the spark they needed to take the product forward.

After the team finished beautiful prototypes, Square Off was launched on Kickstarter in 2016 and raised more than $200,000 from 779 backers. They had found their audience and now had to produce.



Despite the enormous challenge, Square Off cofounders Bhavya Gohil (left) and Aatur Mehta put together their first prototype in a few months.

"Why just for visually impaired people? We thought, 'Why not for everyone?'" —BHAVYA GOHIL

An updated chess board and a 4-in-1 game board that allows you to play chess, checkers, connect 4, or halmar recently launched on Kickstarter.

Essential fine-tuning

Because Gohil and Mehta developed such a unique mechanism, it was a no-brainer to file for intellectual property. They filed for both U.S. and Indian patents on the mechanism inside the board that moves the pieces, and for the interaction between the app in the board.

Gohil said that filing a patent in India is similar to a U.S. patent filing, but office actions and the overall timeline are generally slower. Although having IP filed is helpful for their business, the focus is more on building the strongest community and brand.

The manufacturing process is where Square Off really came to life.

Gohil went to China to find a factory. It was much easier to build the product there, given the much wider selection of parts and pieces than they had during the development in India. Also, shrinking the overall size and weight gave the product enhanced performance and durability. The result was a much better product than originally promised to Kickstarter backers.

With Square Off a hit with chess players around the world, the makers continue to make improvements. They are working on creating training modes for the board so it can teach beginners how to play, as well as intermediate and advanced strategies.

They also just launched two new boards on Kickstarter at the beginning of 2020, an updated chess board and a 4-in-1 game board that allows you to play chess, checkers, connect 4, or halma. This second crowdfunding campaign raised more than $626,000.

The long-term plan is to bring other board games onto the platform to give users many different options for having the tactile feel of playing a board game—even if the opponent is not in the same room.

Details: squareoffnow.com

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/.

Climb the Charts

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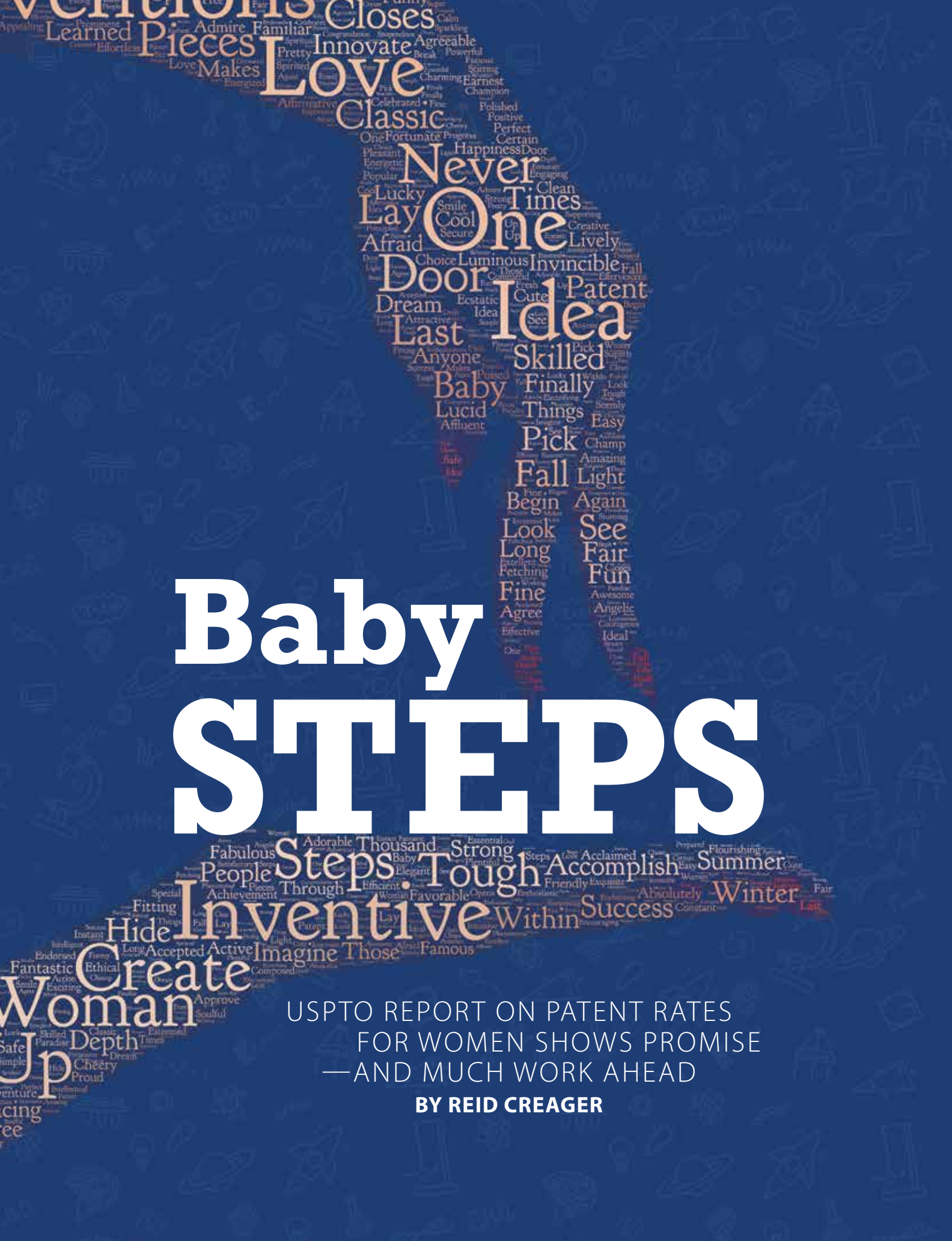


USPTO REPORT ON PATENT RATES FOR WOMEN SHOWS PROMISE —AND MUCH WORK AHEAD

BY REID CREAGER

THEY ARE AMONG THE FAMILIAR ACRONYMS you see in *Inventors Digest*: IP. USPTO. PTAB. NPE. IPR. CAD. STEM. STEAM. IoT.

Some of these may or may not be that important for either the seasoned inventor or person with casual interest in the field. But a more recent acronym should be essential for anyone with an interest in inventing.

WIR.

The Women Inventor Rate will help shape the future of innovation. Its historic lagging growth rate has been an ongoing issue, but a July report by the United States Patent and Trademark Office flashes a glimmer of hope:

- The percentage of new female-inventor patentees increased from 16.6 percent in 2016 to 17.3 percent by 2019.
- During that same period, the WIR—the percentage of women among all U.S. inventor-patentees—grew from 12.1 percent to 12.8 percent.
- Patents with at least one female inventor accounted for 21.9 percent of patents through 2019, up from 20.7 percent three years earlier.
- The total new female patentee-inventors grew an average of 4 percent annually between 2014 and 2019, compared to a 2.5 percent increase by male patentee-inventors during the same period.
- The share of women among all new inventor-patentees grew from about 5 percent in 1980 to 17.3 percent by the end of 2019.

"Progress and Potential: A profile of women inventors on U.S. patents," updates findings from a 2019 report on the same topic. The new 10-page study uses three years of data spanning January 2017 through December 2019.

Fighting history

Inventing has always been a largely male domain. The first U.S. patent was awarded in 1790 to Samuel Hopkins, for a process of making potash (an ingredient used in fertilizer).

It wasn't until 19 years later that a woman received a patent: Mary Dixon Kies for her process of weaving straw with silk or thread, a key contribution in the hat industry.

To this day, women talk about the challenges of being actively productive in a male-dominated arena. The inventing process involves many steps—working with attorneys, manufacturers, distributors, company executives—most of whom are men.

Twentysomething SoaPen cofounders Amanat Anand and Shubham Issar, whose invention was the subject of a July 2020 *Inventors Digest* cover story, discussed this challenge as they first navigated the inventing landscape: "To be a woman, not just in design but also in this field of manufacturing … going to factories it's, like, mostly all men workers," Issar said.

Inventors Digest **June 2020 cover subject Amanda Andereck (left) called the study's findings "hopeful"; Kelly Bagla (June 2018 cover) said "It was just a matter of time."**

AMANDA ANDERECK PHOTO BY MATT BLUM

"Women will not only be leaving their mark on the world by the inventions they leave behind but finally getting the credit they deserve by holding the patents." —LILY WINNAIL

Similarly, the number of women in STEAM (Science, Technology, Engineering, Arts and Mathematics) or STEM fields has been historically dwarfed by men. And similarly that number is growing, but also with a long way to go.

Although women make up 50 percent of the labor market and more of them are graduating with STEM degrees, as of last year only 28 percent of them worked in STEM fields. Those leaving these disciplines often cite isolation, a hostile work environment and ineffective feedback.

Women react

Inventors Digest has long been a champion for women's participation in the innovation process.

MEDIA REACTION, TAKEAWAYS

Innovation Alliance

"The report shows that some incremental progress is being made in increasing the number of women entering and staying active in the patent system but overall confirms that women are still receiving patents at rates far lower than men, a trend that undermines American innovation and competitiveness."

National Law Review

"The U.S. Patent and Trademark Office (USPTO) has issued an encouraging and informative 2020 update to its February 2019 'Progress and Potential' profile of women inventors on U.S. patents.

"The initial report documented trends in the proportion of patent inventors who are women (the Women Inventor Rate) and the proportion of patents that have at least one woman inventor (their "Share of Patents") through 2016. The update shows only slight increases in both of these metrics over the last three years, but the increases are seen for almost all companies that file large numbers of patents and almost all the states in the nation.

"The update also indicates that more and more women are among inventors being granted their first patent, and such women are almost as likely as men to obtain further patents. … The Update thus demonstrates that our efforts to involve women inventors in the patent process can and will bring about the sorely needed improvement in their participation."

CNET

"The percentage of women inventors filing additional patents within five years of their first is on the rise.

"Data from the United States Patent and Trademark Office show improvement in the patent field for women since the 1980s. Back then, only 28 percent of women filed another patent within five years of their first, compared with 38 percent of men. In 2019, that number has jumped to 46 percent of women, compared with 52 percent of men, showing that the gender gap is narrowing."

Bloomberg

"While showing improvement, the report is the latest to look at what's become known as the 'lost Einsteins' -- women,

Its cover has featured one or more females in 17 of its past 35 issues; its content regularly covers issues involving women and inventing; three of its monthly contributors are women; its longest-running editor, Joanne Hayes-Rines, was the face of the publication for 20 years.

Some recent *ID* cover subjects were heartened by the latest USPTO report.

San Diego-based attorney Kelly Bagla (June 2018), said, "This is fantastic and evident that more and more women are taking control of their own future by inventing products that eventually help all. It was just a matter of time."

Lily Winnail (Padalily, June 2016) discussed how women as innovators have grown in the context of societal changes:

"Women throughout history have been responsible for some of the most successful inventions. They have contributed inventions that changed the way the world works, that solve problems, and that make things more efficient.

"These women are *innovators* who have created some of the most brilliant ideas. I am delighted to see this reality translating into an increase in women patent filings in 2020.

"Women being able to protect their inventions may have been difficult in the past with less financial independence. But these numbers show that women will not only be leaving their mark on the world by the inventions they leave behind but finally getting the credit they deserve by holding the patents."

Some were less enthusiastic after seeing the new report's findings.

On the website IP Watchdog, reporter Rebecca Tapscott wrote that "While the Report highlighted improvements in the percentages of women inventors since the 2019 Report, the data indicated that little growth has actually taken place.

"The report noted that the share of women among all inventor-patentees, i.e. the women inventor rate (WIR), was 12.8% in 2019, up from 12.1% in 2016. However, the report said that it is not even clear if this growth

Joanne Hayes-Rines, longtime I*nventors Digest* editor and the face of the publication for 20 years, fought for women's equality in inventing and patents.

underrepresented minorities and people from lower socioeconomic rungs who have been shut out of what could be a key driver to financial growth.

"Tapping into that potential is seen as key to continued American supremacy in different technology fields. Patents can form the basis for new products and companies, entice venture capital dollars, and protect inventions from unfair competition."

Protocol

"If you hold a patent in the U.S., chances are you're a man.

"Listed as a 'major finding' in the report is the fact that the number of patents awarded with at least one woman inventor listed increased from 20.7 percent in 2016 to 21.9 percent in 2019. That's an increase of just 1.2 percentage points. … But the good news is that these numbers are at least rising and not falling."

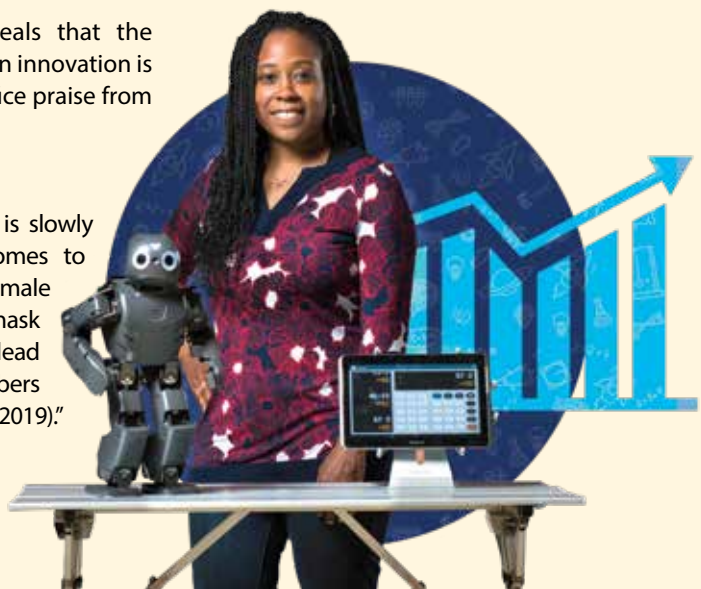
World IP Review

"(The new report) reveals that the participation of women in innovation is growing, earning the office praise from the legal industry."

Law360

"The U.S. patent system is slowly progressing when it comes to the participation of female inventors, with top N95 mask maker 3M Co. taking the lead in improving those numbers (1.35 percent from 2016 to 2019)."

Roboticist professor and chair Dr. Ayanna Howard: "If we as women don't understand (patents') value, we're not going to make the effort."



can be attributed to "the contributions of women inventor-patentees because the dominant share of this output comes from mixed-gender teams."

She added: "Given that women held about 2 million science and engineering jobs as of 2017, even the highest assignee percentage of 29% AWIR (average women inventor rate) is a stark indicator that women are greatly underrepresented in the U.S. Patent System."

SoaPen cofounders Shubham Issar (left) and Amanat Anand, featured in the July 2020 *Inventors Digest*, overcame challenges in the male-dominated manufacturing field.

The struggling tree grows

So what is the real takeaway? As with much statistical data, numbers can be shaped or interpreted to comport with a specific point of view.

But organized efforts to quantify women's participation in innovation, such as those by the USPTO, are a positive for the heightened awareness they provide. And even incremental growth in female inventors shows some hope.

Amanda Andereck, the *Inventors Digest* cover feature for June 2020 (Sassybax), provided this wistfully optimistic take.

"I do find this new study hopeful for women, and while it's a small increase, any increase is good!

"I am sure that with everything going on in our world right now, we will be seeing more progress for women and all of humanity. I have faith in the human race and believe that even though growth is sometimes impeded by various forces, it cannot be stopped.

"Growth is like the tree that sprouts out of the side of rock cliff—hardly a fertile environment. It may struggle mightily, but it cannot be stopped. That is God's promise to us."

AND BY THE WAY...

- Most female inventors are found in tech-heavy states and those with a larger female workforce. Roughly 41 percent of women who are awarded patents are in four major tech-hub states: California, Massachusetts, New York and Texas.
- The District of Columbia, Delaware and New Jersey had the highest average women inventor rates from 2007 to 2019.
- Women represent 48 percent of the biological and life sciences workforce, but the women inventor rate is just 25 percent on biotechnology patents, 23 percent on pharmaceutical patents.
- The WIR increased the most in patents granted to universities, hospitals and public research organizations. Women accounted for 7 percent of patents granted to universities and hospitals between 1977 and 1986, and 4 percent of patents granted to public research organizations. In the past decade, these numbers grew to just under 20 percent and 15 percent, respectively.
- Procter & Gamble had the highest average women inventor rate among companies—29 percent of its workers—among the 29 top patent assignees from 2007 to 2019.
- Many tech firms on the list of companies with the most awarded patents by the USPTO also increased the rate at which they had women listed as inventors on patents. 3M, IBM, Xerox, Oracle, Microsoft, Alphabet, Intel, Amazon, Adobe, Apple, Cisco and Honeywell all had a small increase in the percentage of women on patents during the last four years.

Patents by Women: **Our Top 10 List**

Here are 10 noteworthy women's U.S. patents with their file numbers.
(We are leaving out the dishwasher until all models do a good job of drying the dishes. Just because.)

1 **Technique of weaving straw with silk and thread to make hats (1809):** Let's start at the beginning: This patent, issued to Mary Dixon Kies and signed by President James Madison, was the first in U.S. history for a woman.

Kies helped save the hat industry in New England. But fashions changed, she did not profit from her invention, and she died penniless. Her invention has no patent file because it was destroyed in an 1836 fire at the United States Patent Office.

2 **2,292,387—Secret communication system (1942):** American actress Hedy Lamarr worked with Hollywood composer George Antheil to invent a frequency-hopping technique that is an important development in the field of wireless communications. Wi-Fi could not exist without it.

During World War II, the frequency hopping reduced the risk of detection or jamming of radio-controlled torpedoes. This is also known as Spread Spectrum Technology.

3 **3,819,587—Wholly aromatic carbocyclic (Kevlar, 1966):** It's ironically fitting that in a world where men commit most violent crimes, a woman invented an important tool for protecting people from them.

Stephanie Kwolek created a polymer fiber five times stronger than the same weight of steel that became the material of choice for bullet-resistant vests and many other applications. It generates hundreds of millions of dollars in sales worldwide each year.

4 **258,191—Life raft (1882):** A former dressmaker and serial inventor, Maria Beasley created design improvements that made rafts fireproof (with guardrails), compact, safe and easy to launch. Her rafts were onboard the Titanic when it sank in the North Atlantic Ocean in April 1912. Her rafts helped save 706 lives there.

5 **743,801—Window cleaning device (windshield wiper, 1903):** Alabaman Mary Anderson conceived of and designed the first windshield wiper blade. By 1916, windshield wipers were standard equipment on all American cars.

6 **509,415—Car heater (1893):** This invention by Margaret Wilcox, a mechanical engineer, warmed the interior of a car while keeping interior windows mist free. She also invented a combined clothes and dish washer, but that idea just spun around.

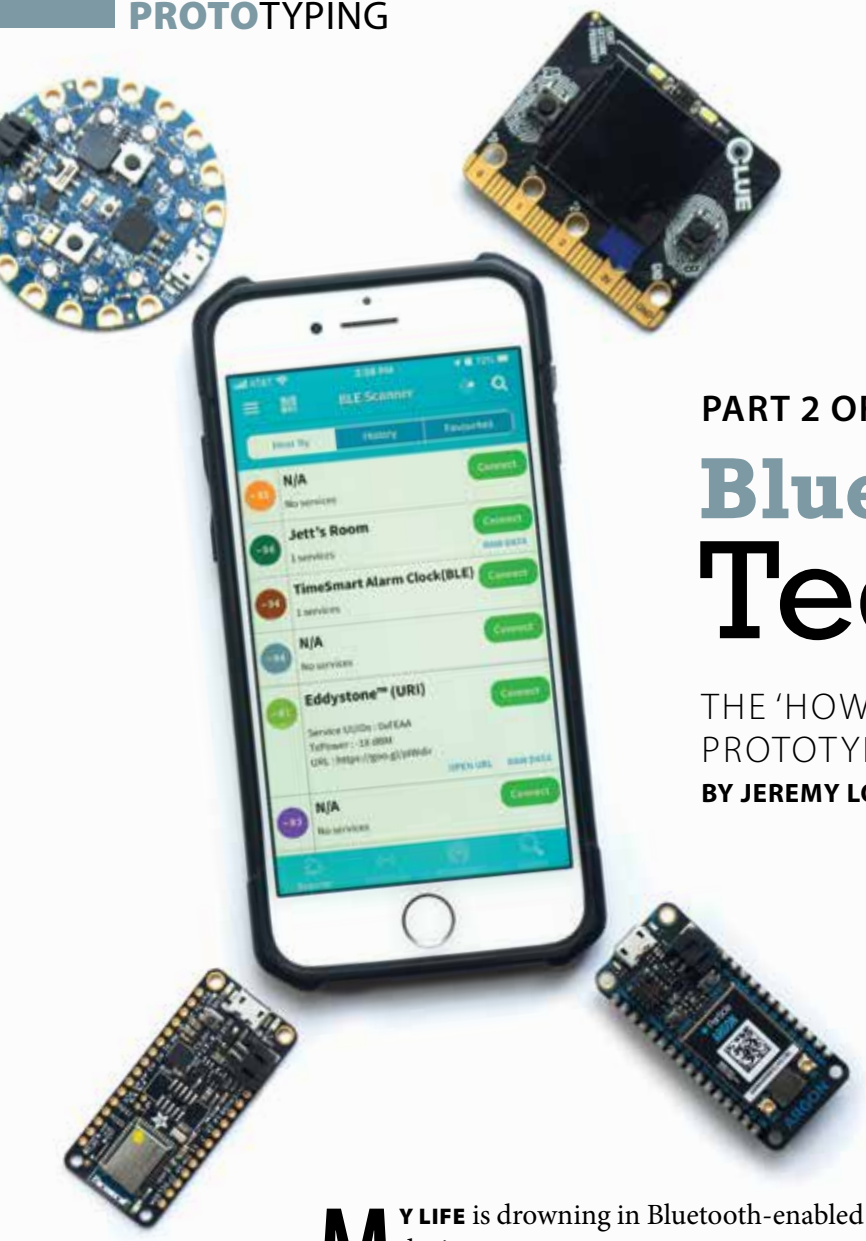
7 **3,482,037—Home security system utilizing television surveillance (1969):** Marie Van Brittan Brown was tired of being afraid when her husband, Albert, was not home in their dangerous New York neighborhood. She created a complex system with four peepholes, a camera, a monitor, a two-way microphone and an alarm button that could be pressed in an emergency to alert police and neighbors. The couple were credited with one of the major inventions by African-Americans.

8 **3,574,791—Block and graft copolymers (Scotchgard, 1973):** Chemist Patsy O'Connell Sherman and Samuel Smith are listed on the patent. "We were trying to develop a new kind of rubber for jet aircraft fuel lines when one of the lab assistants accidentally dropped a glass bottle that contained a batch of synthetic latex I had made," she says on theinventors.org. "Some of the latex mixture splashed on the assistant's canvas tennis shoes and the result was remarkable"—because the spill would not wash off, and it resisted soiling.

9 **2,556,800—Diaper wrap (disposable diaper, 1951):** Those of you who may roll your eyes at this one have probably never had to change a lot of diapers. Marion Donovan's update on traditional cloth diapers also included snap fasteners instead of safety pins.

10 **748,626—Game board (1904):** This wasn't just any game board. It was the forerunner to the iconic game Monopoly, made famous by Charles Darrow.

But let's reserve the boldface credit for Lizzie Magie. Her Landlord's Game, a statement against the alleged evils of land grabbing, later became a celebration of that very process with Darrow's game. Magie reportedly earned just $500 for her invention.



PART 2 OF 2

Bluetooth Tech, Techniques

THE 'HOWS' OF A CONNECTION, AND PROTOTYPING YOUR OWN DEVICES

BY JEREMY LOSAW

MY LIFE is drowning in Bluetooth-enabled devices.

My gateway drug was when I set up Bluetooth in my car. Once I had hands-free calling and I could play podcasts from my phone inside my very chic 2012 Hyundai Accent, I was all in.

Now there are Bluetooth products all over my house—mice, speakers, LED lights, Fitbit, Amazon Echo Dot. It is also fun to make your own devices.

In the second and final part of this series, I will discuss more the details of the technology, as well as techniques and hardware you can use to build your own fleet of Bluetooth devices.

For most BTLE applications, the smartphone is the central device that receives data and commands peripheral devices.

Classic vs. BTLE

There are two main flavors of Bluetooth to be aware of as a developer—classic Bluetooth and Bluetooth Low Energy (BTLE). Although they both use 2.4 GHz as their radio frequency, they are handled slightly differently.

Classic Bluetooth was designed to push a lot of data at close range. This makes it suitable for audio devices, because the high data throughput helps maintain strong audio quality.

However, this capability comes with drawbacks: The battery life is on the order of hours, and it takes longer to pair (though still less than 1 second). Bluetooth Classic requires the user to go through a pairing sequence to initiate the connection, which is usually a long button press or similar button sequence on the peripheral device.

The other drawback is that the peripheral can only be bonded to one device. So to share a speaker, you need to unpair the connection and pair with a new phone.

As the name implies, BTLE is a lower-power version of Bluetooth and much better suited for IoT devices. It was first introduced in the 4.0 specification of the protocol, which was released in 2009, and was originally marketed as Bluetooth Smart.

The message size is limited to 8-47 bytes, whereas Classic is 358 bytes. However, this is

PHOTOS BY JEREMY LOSAW

perfect for IoT devices that need to transmit just a few pieces of data, such as a temperature or other piece of sensor data.

The upside is that depending on the broadcast frequency, battery life can be measured in days, months or years. Devices can wake up, transmit their data, and go back to sleep until their next broadcast.

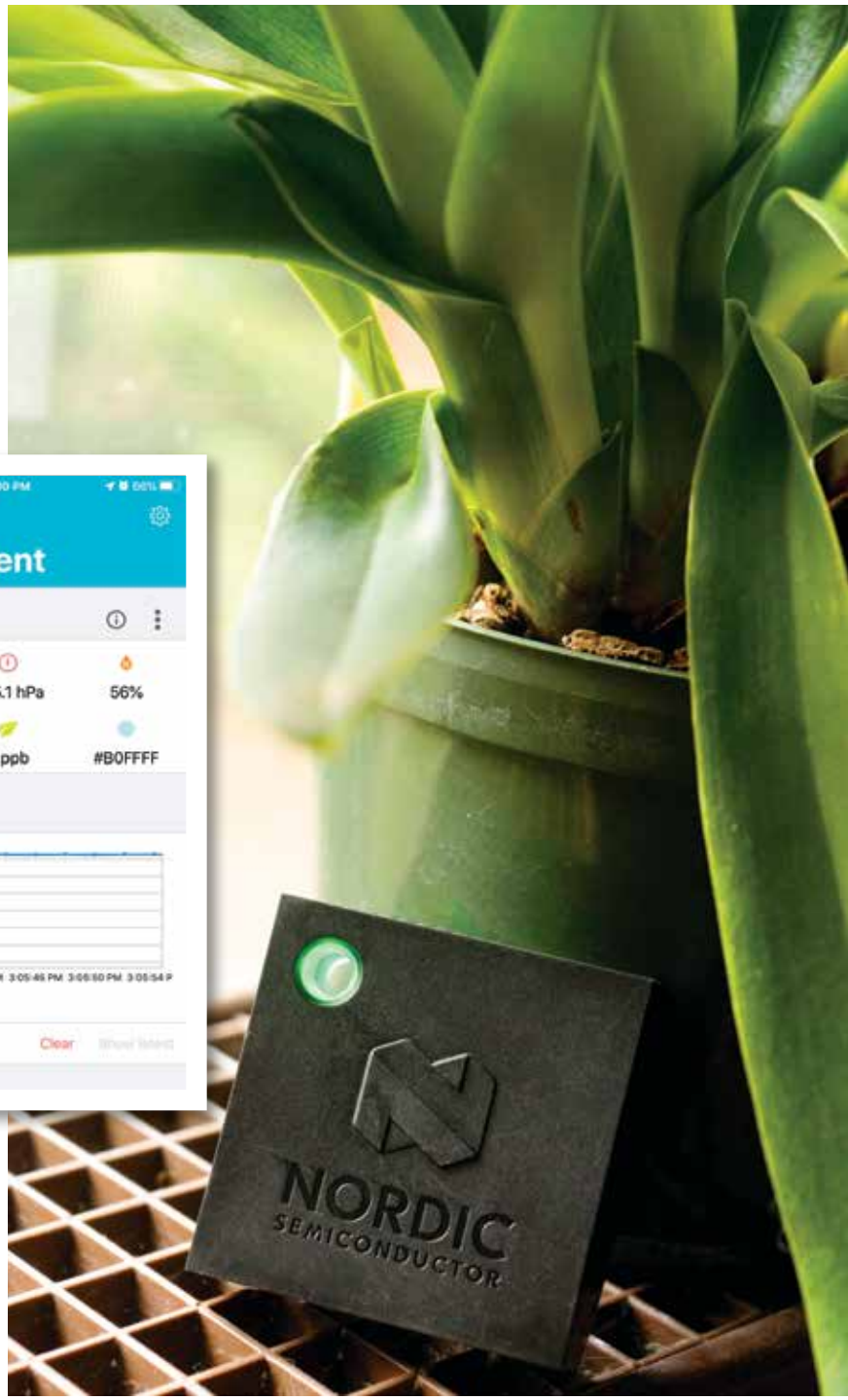
BTLE devices are not compatible with Bluetooth Classic, but smartphones have dual mode chips that support both types of connections. Because BTLE is more robust for IoT applications, most of the remaining discussion will focus on that.

Peripheral and central devices

The network architecture for Bluetooth devices is arranged such that there is a central device and one or more peripheral devices.

The central device, usually a smartphone, is the boss. It controls the relationship with the peripheral devices. It can query them for sensor data or command them to perform some action, such as to turn LEDs to a certain color.

In this relationship, the peripheral device is the submissive and does what the central device asks. However, the central device needs to know the peripheral device is available. So, the peripheral sends out advertising signals at a programmed frequency—sometimes every fraction of a second, sometimes every few hours, depending on the desired battery life—until it finds a receptive central device for connecting.



The Nordic Thingy 52 is a great prototyping tool to get started in Bluetooth development. Here, the author monitors the environmental conditions of plants indoors.

The central device can connect to and communicate with up to seven Bluetooth devices at once, but a peripheral can only pair with one central device at a time unless it is set up as a beacon.

A peripheral in beacon mode only broadcasts data; it never actually pairs with a central device. This one-way communication allows for multiple central devices, usually smartphones, to receive the data it is offering. This is a common setup in retail applications where beacons can be used to advertise a coupon or product in the store.

The way Bluetooth devices share data is defined by attributes called services and characteristics.

A characteristic is a single data point that can be shared between Bluetooth devices. For example, a smart scale may report a characteristic such as weight. A service is a defined group of one or more characteristics that compose a sensible packet of information.

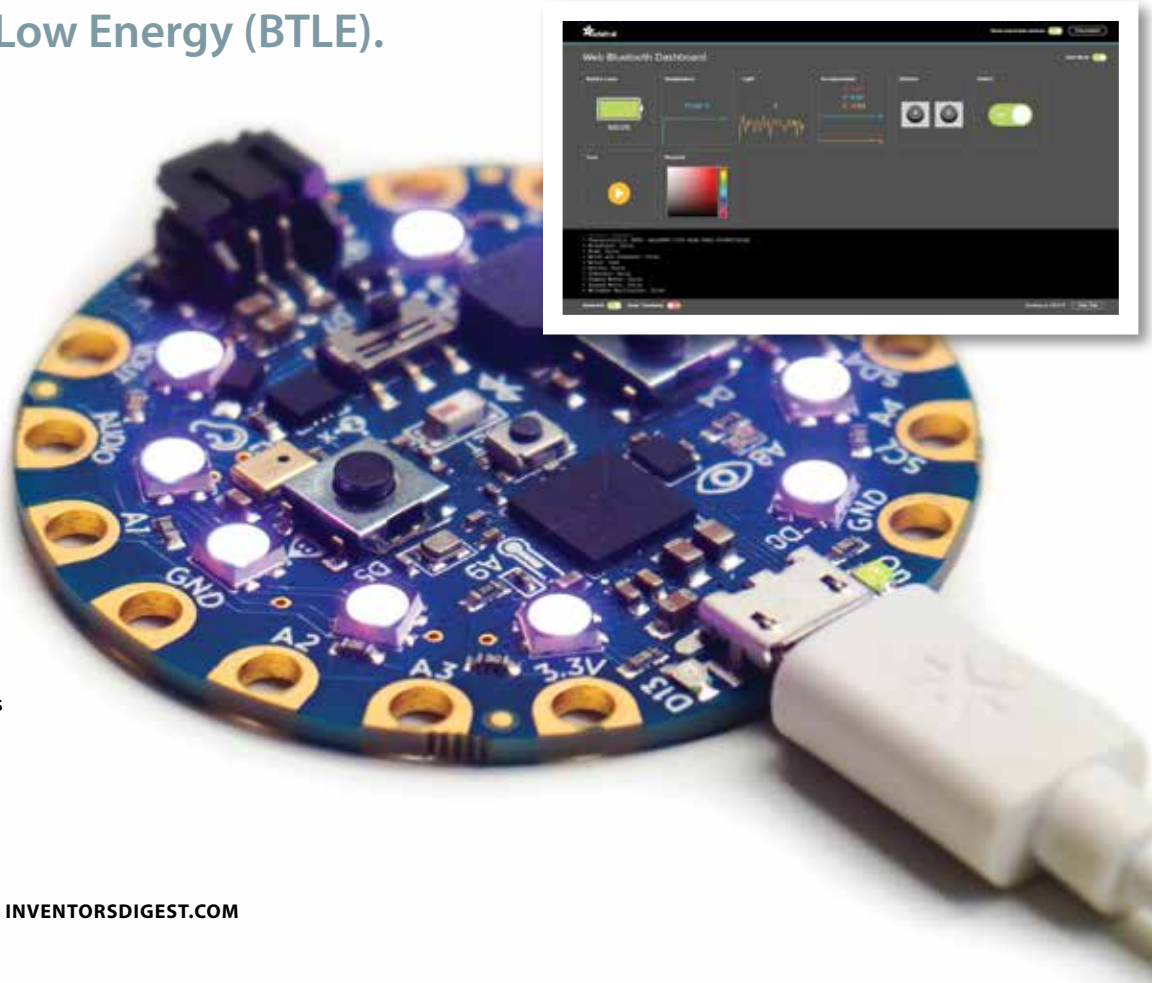
Staying with the smart scale example, the service may report the characteristics of weight, body mass index and device battery level. Each characteristic has its own unique identifier number, and the Bluetooth website provides ID numbers for officially adopted characteristics and services that are commonly used for Bluetooth devices. This also makes it easy for smartphones to recognize different types of Bluetooth devices.

Prototyping a Bluetooth

Although the "hows" of what it takes to create a Bluetooth connection are neat, prototyping a Bluetooth device is much more interesting.

One of the easiest ways to prototype a device with Bluetooth is with the Nordic Thingy 52.

There are two main flavors of Bluetooth to be aware of as a developer—classic Bluetooth and Bluetooth Low Energy (BTLE).



The Adafruit Circuit Playground Bluefruit is another easy-to-use development tool for BTLE devices. Here it is shown with the web dashboard that allows you to read the sensors and send tones and colors to the onboard speaker and LEDs.

Nordic is an industry leader in manufacturing Bluetooth chips, and the Thingy is a development board suitable for the newbie or seasoned developer. It has many sensors onboard—including temperature, humidity, air pressure and CO2 concentration—and it has an RGB LED and a speaker.

The app is free to download and lets you interact with the device without writing any code. You can see live sensor data, change the LED color and pulse pattern, and play audio tones.

For the more adventurous prototyper, many other developer boards and tools provide an easy route to customized options.

Arduino offers a Bluetooth-enabled version of its ubiquitous development board. It is programmable through the Arduino IDE and has the familiar footprint and 5V logic that is comfortable for many shadetree programmers.

However, I like the Circuit Playground Bluefruit produced by Adafruit.

Like the Thingy, it has a bunch of on-board sensors including temperature, accelerometer, microphone and light, but it also has a ring of RGB addressable LEDs. It can be programmed easily with the Arduino IDE or Circuit Python, which is an easy language for beginners to interact with hardware.

It integrates directly with the free Adafruit Bluefruit Connect app to transmit sensor data or interact with the LED or other I/O pins, and Adafruit just released a web app that allows control of the device via a chrome web browser. And like everything Adafruit produces, there are a ton of easy-to-follow tutorials and sample code to get you going.

Bluetooth is a powerful and ever-growing technology that is becoming an increasingly larger part of the consumer electronics space. It is the backbone of personal audio devices and an integral part of the IoT ecosystem, especially wearables. It is important for innovators to understand how the technology works, its limitations, and how to quickly build prototypes to use it to good effect.

Court Cases Explode

MOST RECENT LITIGATION DATA SHOW WHY PATENTS ARE SEEN AS IMMUNE TO RECESSIONS **BY LOUIS CARBONNEAU**

IT IS increasingly difficult to meet someone who has not been affected, directly or indirectly, by this insidious virus. With summer winding down, this is no time to let our guard down; we all are in this together as "Covidians," and we sure don't have the luxury of being "covidiots" about it.

As I try to focus on the macro picture, remember that for those who need their daily dose of news, you can follow me on either LinkedIn or Twitter, where I post regularly. I hope all of our readers and their loved ones are staying safe.

The NPE factor

In my last writing, I observed that patents are generally seen as "recession proof." This seemed to be reflected in an upward trend in patent litigation, as reported by Bloomberg Law. (Editor's note: That data announced in June showed that even as the coronavirus disrupted U.S. courts and businesses, patent lawsuits in the first five months of 2020 increased 9 percent year over year. That pace was also up 5 percent from the same period in 2018.)

Data provided by RPX about the 2008-12 recession show that patent litigation exploded starting in 2010. It was mostly driven by non-practicing entities or NPEs—those holding a patent for a product or process but with no intention of developing it—since the number of cases filed by operating companies remained fairly stable.

Cases involving NPEs, which had numbered just several hundred in 2005, spiked to about 10,000 by 2012. Cases involving operating companies stayed in the 2,000-3,000 range during that period.

2019 NUMBERS

U.S. patent litigation cases began climbing last year:

777 after Q1
877 after Q2
936 after Q3
1,034 after Q4

Another uptick

With this latest recession, we see the same phenomenon at work again—with both NPEs and operating companies—although total cases ironically spiked *before* the economy broadly sank into a state of recession.

Total patent litigation cases began climbing last year: from 777 after the first quarter to 877 in the second quarter; to 936 through the third quarter; and to 1,034 by the end of the fourth quarter. Then, following a dip to 903 in the first quarter of this year, cases shot up to 1,199 by the end of the second quarter—during which the pandemic was at full steam.

So this latest trend, and its relationship with the current economic uncertainties, is thus far more coincidental than causal in my view. Still, the number of new defendants added in the second quarter is rather impressive.

The uptick in NPE activity had already started at least a year ago, as we have regularly discussed.

The increase in NPE-initiated patent cases across the board in the first half of 2020 over the same period in 2019 was 16 percent. Some areas, such as biotech/pharma and automotive, had massive increases in activity levels: 333 percent and 150 percent, respectively.

Further, the increase in operating company-initiated patent cases across the board in the first half of 2020 over the same period in 2019 was 41 percent. Cases filed by operating companies soared from 345 for Q1 in 2019 to

The number of U.S. court cases grew significantly during the 2008-12 recession, as well as during the first full quarter of this year's pandemic that triggered another downturn.

519 by the end of Q4, an increase of more than 50 percent.

So whoever is telling the world that the "patent trolls" are back and the end of the world is near should see these numbers.

Common-sense business

Ultimately, the bottom line remains the same. No matter who initiates a patent infringement lawsuit, only the best patents will survive; any assertion claim with the slightest flaw as to validity or infringement will be dwarfed in no time by skilled and deep-pocketed defendants.

By then, though, the price of a license might be an order of magnitude greater than it could have been when the alleged infringer was initially approached. The alleged infringer would have had the opportunity to license the same patents and to acquire all rights to the assets—while in many cases eliminating a significant business risk as well.

This is why I cannot truly understand why most operating companies devote no budget whatsoever for patent acquisitions (or pre-litigation licenses) but have almost unlimited budgets to defend the many cases that this very approach is bound to attract.

This is such a short-sighted approach. To my point, a vast majority of patents that we at Tangible IP have sold these past years were later asserted by the new owner (and no, we do not sell only to NPEs).

In addition, when a sale could not be consummated because infringers preferred to stay on the sidelines, our clients frequently retain law firms directly to assert their patents. Either way, the main targets will have to defend themselves against these patents and will pay a lot more doing so than what they would have when we first knocked at their door with a great business opportunity.

I believe this is about to change as new cases increase rapidly. And just as we see with COVID-19, it is much better to prevent than to wait until you have to fight a costly battle—no matter the outcome.

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.

Qualcomm Vindicated

NINTH CIRCUIT REVERSES CALIFORNIA COURT'S RULING THAT PROHIBITED FIRM'S CORE BUSINESS PRACTICES

BY EILEEN MCDERMOTT

All Eye on Washington stories initially appeared on IPWatchdog.com.

THE U.S. COURT OF APPEALS for the Ninth Circuit vacated a decision of the U.S. District Court for the Northern District of California finding that Qualcomm had engaged in unlawful licensing practices, and reversed a permanent, worldwide injunction against several of Qualcomm's core business practices.

The opinion, authored by Judge Consuelo M. Callahan, was unanimous.

A winding road

In May 2019, Judge Lucy Koh issued a 233-page order finding that Qualcomm had engaged in unlawful licensing practices. She ordered in part that Qualcomm "must make exhaustive SEP licenses available to modem-chip suppliers on fair, reasonable, and non-discriminatory (FRAND) terms and to submit, as necessary, to arbitral or judicial dispute resolution to determine such terms…[and] submit to compliance and monitoring procedures for a period of seven years."

The Ninth Circuit's August 11 decision issued a partial stay of Koh's ruling and more than a dozen amicus briefs were filed, mostly in support of Qualcomm or its arguments. Koh's ruling had been widely criticized. Judge Douglas Ginsburg of the U.S. Court of Appeals for the D.C. Circuit also condemned the decision in a paper co-authored with former Federal Trade Commission Commissioner Joshua Wright, and attorney Lindsey Edwards of Wilson Sonsini Goodrich & Rosati.

The U.S. Department of Justice notably filed a statement of interest in the case that departed from the FTC's views. Even within the FTC, some of the commissioners have come out against the commission's decision to pursue the case.

At the IPWatchdog Patent Masters Symposium in September 2019, FTC Commissioner Christine Wilson told attendees that Koh's decision "scares me" as it "radically expands a company's legal obligation to help its competitors."

Koh got it wrong

In the August ruling, the Ninth Circuit panel began by first examining the district court's conclusion that Qualcomm was under an obligation to license its standard-essential patents (SEPs) to its direct competitors in the chip market, as outlined in *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.* (1985).

In *Aspen Highlands Skiing Corp.*, the Supreme Court held that the defendant (Ski Co.) made a decision that changed the pattern of distribution that had originated and persisted in a competitive market for several years—even where skiers preferred access to plaintiff Aspen Highlands' mountain in addition to the defendant's, and were thus negatively affected in addition to the plaintiff. It also found evidence that Ski Co.

Federal Trade Commission Commissioner Christine Wilson (left) said Judge Lucy Koh's original decision "scares me" as it "radically expands a company's legal obligation to help its competitors."

was willing to turn away daily ticket sales to skiers wanting to redeem the vouchers good for mountains owned by both Ski Co. and Aspen Highlands to push its smaller competitor Aspen Highlands out of the market.

This "profit sacrifice test" has been used continuously by courts to isolate monopolizing conduct that has no efficiency justification.

But here, the Ninth Circuit held that "none of the required elements for the *Aspen Skiing* exception were present, and the district court erred in holding that Qualcomm was under an antitrust duty to license rival chip manufacturers."

The court said there was no evidence in the record to uphold the district court's argument that "Qualcomm terminated a 'voluntary and profitable course of dealing' with respect to its previous practice of licensing at the chip-manufacturer level"; Qualcomm's rationale for switching its licensing scheme was not to obtain higher profits in the long run by excluding competition—the second element of the Aspen Skiing exception—but was due to the change in patent-exhaustion law; and there was no evidence that Qualcomm singles out any specific chip supplier for anticompetitive treatment in its SEP-licensing practices.

The FTC argued that if Qualcomm was not subject to an antitrust duty to deal under *Aspen Skiing*, the company still engaged in anticompetitive conduct in violation of Section 2 of the Sherman Act. But the panel said:

"The FTC did not satisfactorily explain how Qualcomm's alleged breach of its contractual commitment itself impaired the opportunities of rivals. Because the FTC did not meet its initial burden under the rule of reason framework, the panel was less critical of Qualcomm's procompetitive justifications for its OEM-level licensing policy—which, in any case, appeared to be reasonable and consistent with current industry practice.

"The panel concluded that to the extent Qualcomm breached any of its FRAND commitments, the remedy for such a breach was in contract or tort law."

Citing the "persuasive policy arguments" submitted by experts such as Judge Paul Michel and former FTC Commissioner Joshua Wright, the court agreed with its caution against "using the antitrust laws to remedy what are essentially contractual disputes between private parties engaged in the pursuit of technological innovation."

The opinion further chided the district court for failing to distinguish between Qualcomm's licensing practices and its practices relating to modem chip sales. "This was, no doubt, intentional," said the court.

Qualcomm reaction

Don Rosenberg, Qualcomm executive vice president and general counsel, congratulated the panel on its "thoughtful" decision.

"The court of appeals' unanimous reversal, entirely vacating the district court decision, validates our business model and patent licensing program and underscores the tremendous contributions that Qualcomm has made to the industry. We thank the panel for its thoughtful consideration of this important case."

Eileen McDermott is editor-in-chief at IPWatchdog.com. A veteran IP and legal journalist, Eileen has held editorial and managerial positions at several publications and industry organizations since she entered the field more than a decade ago.

USPTO, Post-Pandemic

THE LATEST IN PATENT PROCESSES AND UPCOMING CHANGES

BY EILEEN MCDERMOTT

U.S. PATENT and Trademark Office Commissioner for Patents Drew Hirshfeld and other USPTO staff recently updated attendees of IPWatchdog and LexisNexis' webinar, "A Conversation with the Commissioner: A Look Inside Patent Processes at the USPTO," on issues such as staffing, reopening plans, and upcoming new processes for routing patent applications.

On July 30, Hirshfeld said the office was in Phase 1 of reopening and at "maximum telework" capacity.

In March, the office went to mandatory telework but recently began allowing some employees—up to a maximum of 100 at a time—back in the office. This is a "minuscule" number compared to normal office capacity, Hirshfeld said. There is no date set for the office reopening to the general public.

The USPTO's telework program is used by a large majority of staff, which allowed the office to seamlessly transition during the pandemic. In fact, the office is trending at a slightly higher productivity than projected for the year before the pandemic, Hirshfeld said.

However, he warned there's likely to be a latent impact on productivity after the pandemic, as employees in general are not taking leave right now.

"They're working more hours than they normally would, so there's likely to be a drop-off in productivity," he said. "This is not unique to the USPTO."

Filings slightly up

The number of patent filings is up 1.4 percent. But before March, filings were trending at a 4 percent increase over last year. Compared to last year, there is a decrease of about 2.5 percent.

"We're actively watching that," Hirshfeld said. Though he said the office is "in a good place," he also cautioned that patents are often a lagging indicator of changes to the economy, so there could be larger impacts down the road. Fee revenues are also slightly down, about 1.5 percent from what was projected for the year.

IPWatchdog founder and CEO Gene Quinn said large companies tend to hunker down during bad economic circumstances, while small companies and individuals become more active.

"If that's really what's going on, that's good news for the future of America," Quinn said. "Creative people take the opportunity to create, which could be a real silver lining message."

Foundational changes

Hirshfeld queued up Group Director Patent Operations, Tech Center 2400 Jay Kramer to explain some "foundational changes" coming in October.

In 2010, the office signed an agreement with the European Patent Office to adopt a Cooperative Patent Classification system, in a step toward international harmonization. About 50 other patent offices worldwide are using CPC.

The new system will allow applications to be coded according to multiple disciplines, not just one, and will allow more flexibility to find examiners with the specific expertise in the technologies.

These multiple symbols will create a "classification picture" that can be matched with examiners' skills via their "examiner portfolio." The changes are expected to allow for better quality examination of applications.

Before March, patent filings were trending at a 4 percent increase over last year. Compared to last year, there is a decrease of about 2.5 percent.

So what will happen to the traditional "art units" at the USPTO? Kramer said that although they will certainly be fundamentally changed and arguably less needed, their primary focus—training and guidance from supervisory patent examiners—will remain intact.

IPWATCHDOG CON2020 GOING ONLINE

Severe COVID-19 issues in Texas have prevented a traditional version of this premier discussion and networking event this year. IPWatchdog Virtual CON2020 will be September 1-30, 2020. Registration for all panels and keynotes is free.

Details: con2020.ipwatchdog.com

Classifieds

TRADE SHOWS SEPTEMBER 2020

Editor's note: All major shows originally scheduled for this month, including those that were postponed until September, have been canceled for 2020 due to the COVID-19 pandemic.

IoT Corner

The 2021 **Consumer Electronics Show** has opted to go all virtual.

The Consumer Technology Association, organizer of one of the world's largest trade shows, made the announcement in late July in response to the COVID-19 pandemic. The 2020 show attracted 170,000-plus visitors to Las Vegas in January.

Although the specific schedule has not been released, the CTA is promising to deliver virtual press events, product showcases, keynote speakers and networking. The announcement is another big blow for in-person events in a calendar-ravaged year, but the CTA is tentatively planning a live CES in 2022. —*Jeremy Losaw*

Wunderkinds

Fifteen-year-old **Max Melia** of Bristol, England, designed a watch to warn users when they are about to touch their faces after both of his parents contracted COVID-19. The Vybpro is designed to vibrate and make warning beeps when a user's hand approaches the face. Max's father helped him with concept work and research, and Max has worked with a product designer to create a working prototype. Although a recent Kickstarter campaign did not reach its $78,590 goal, the team is determined to get the watches into production.

What IS that?

Tired of being a slave to your phone? Throw it in the **Mobile Phone Jail Cell Prison**, give your key to someone else for an hour, and set the timer. Or use it to teach your kids the importance of actual face-to-face interaction. They'll probably hate you—but you're the parent, right?

6 months

The faster timeline for possible patent approval offered to small businesses working on COVID-19-related drugs or treatments, by the United States Patent and Trademark Office. A typical patent application takes about 15 months to get a first response from an examiner.

WHAT DO YOU KNOW?

1 **True or false:**
You can patent a scientific theory.

2 **Which popular videoconferencing format was launched first—Zoom, or FaceTime?**

3 **Which actor from the original "Batman" TV show had a patented invention?**

A) Adam West **B)** Cesar Romero
C) Frank Gorshin **D)** Julie Newmar

4 **Which baseball Hall of Famer is rumored to be the model for the trademarked Major League Baseball logo (1969)?**

A) Johnny Bench **B)** Harmon Killebrew
C) Carl Yastrzemski **D)** Willie Mays

5 **True or false: Abraham Lincoln (the only president to be awarded a patent) reportedly did not like slaveholder Thomas Jefferson.**

ANSWERS: 1. False. But a method or device that utilizes a scientific theory may be patentable. 2. FaceTime, June 2010; Zoom, August 2012. 3. D. Newmar invented the Nudemar pantyhose "for cheeky derriere relief." 4. B. The logo's designer said it was not modeled after any player. 5. True. William Henry Herndon, Lincoln's former law partner, wrote that Lincoln "hated" Jefferson for his moral shortcomings and political views.

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