

Inventors

MAY 2016 Volume 32 Issue 5

DIGEST

Maker's Row MeetUp

National
Inventors
Month

Dr. James Wynne

IN THE LINE OF SIGHT

Ready to Sell

MARKETING STRATEGIES
FOR MOMPREENEURS

Game Changers

MEN WHO SHAPED THE
MODERN WORLD

Trade Show Secrets

LOOK, LISTEN AND LEARN

Patent Drafting

LEARNING FROM
COMMON MISTAKES

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May You Always Invent

Are you aware that May is National Inventors Month? Yes, an entire month is devoted to honoring the men and women behind the novel ideas that have transformed our world. Of course, if you're an inventor, every month is Inventors Month. Inventing is an ongoing process, a part of who you are. Everywhere you look, you observe opportunities for solving problems that make our lives easier, often imagining ideas that have never been conceived.

In *Time Tested*, *Inventors Digest* takes a look at just a few of the inventors who have made lasting contributions to humanity. Where would we be without the printing press, automobiles, penicillin, the World Wide Web, sewing machines, the electric furnace, airplanes and cell phones? Martin Cooper, I'm sure, could not have imagined when he made the first call on a portable cell phone in 1973 that by 2016 more than two billion people worldwide would own smartphones. Oddly enough, there are more mobile devices on the planet than people.

Mothers Day also happens to fall in May, so this month we also pay tribute to inventor moms—women who have solved problems that many moms face during their daily routines. Angelique Warner needed to nurse her baby while she was tending other children and invented Nurse 'N Go. Linsey Ebuon was worried about her infant daughter scratching herself with her long fingernails when she came up with the ultimate coverup: a new take on mittens. When Lisa Pinnell found it difficult to take a toddler and an infant to the grocery store at the same time and still fill a cart with groceries, she designed a grocery cart hammock to hold a baby.

These women are not simply inventors, however, they're successful mompreneurs. What you'll note as you read "Ready to Sell" is the variety of marketing methods the women employed to start and develop flourishing businesses. No matter how great your product, if it's not marketed properly, you won't be successful. From children's expos to the Web to social media, these women discovered the best marketing vehicles to reach their particular markets.

If you haven't reached the marketing stage but have an idea for a product that you are ready to manufacture, you know how difficult sourcing can be. Locating a manufacturer with the right equipment at the right price can be a time-consuming and frustrating process. Finding a manufacturer in the United States is even more problematic. Maker's Row to the rescue. The startup, based in Brooklyn, N.Y., connects product developers with American manufacturers. The brainchild of Matthew Burnett and Tanya Menendez, Maker's Row is a Web-based service that can be particularly valuable for emerging brands.

What do Flash Gordon, a turkey carcass and a calf's eye have to do with LASIK surgery? Find out when you read about Dr. James Wynne and his colleagues, who invented excimer laser surgery. The team found that an excimer laser could be used to create clean cuts in tissue without causing collateral damage to the surrounding tissue, which led to the somewhat miraculous sight-correcting procedure. Imagine how difficult it would be to test a laser that cuts plastic on your own skin. Even Flash Gordon would be impressed.

—Cama

INGENUITY IS AMERICA'S MOST VALUABLE RESOURCE.

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America has been on the cutting edge of innovation for over 200 years because of a strong patent system. If Congress passes harmful patent legislation, it will devalue the system that has helped turn America's best thinking into our nation's #1 export. That will mean fewer new ideas brought to market, fewer jobs and a weaker economy. We can't maintain our global competitive edge by undercutting our greatest asset.

**SAVE THE
AMERICAN
INVENTOR**

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Contents

May 2016 Volume 32 Issue 5

16



Feature

- 26 Maker's Row Meetup**
U.S. Manufacturing Solutions
for Startups and Pros

American Inventors

- 20 In The Line of Sight**
How Dr. James Wynne Discovered
Excimer Laser Surgery
- 23 Moveable Feast**
Nursing Solutions for Modern Moms

Departments

- 7 Bright Ideas**
Spotlight On Innovation
- 10 Time Tested**
Men Whose Ideas Shaped the
Modern World
- 14 Lander Zone**
Some of the Best Ideas Are
the Hardest Sells
- 16 Marketing Tips**
Marketing Strategies for
Mompreneurs
- 30 Prototyping**
Building Castles in the Sky
- 34 Patent Pending**
Learning from Common Patent
Application Mistakes
- 36 Product Development**
Trade Show Secrets
- 38 Eye On Washington**
There is No Such Thing as a
Provisional Patent; Patent Challenges
and the Role of the Patent Trial and
Appeal Board; Fees at the USPTO



ON THE COVER

All Jewelry Contracting, based in New York City, is a member of Maker's Row; photograph by Maker's Row.



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Bright Ideas

Compiled by Eleanor Merrell

emberlight

SMART LIGHTING MADE EASY

emberlight.co

What if you could control all of the lights in your home using your smart phone? What if your lights knew when you were about to come home? What if you never again had to fiddle with dimmer switches or timers? Thanks to emberlight, a smart socket created by Atif Noori of San Francisco, you don't have to wonder anymore.

Emberlight is a smart socket that is compatible with all dimmable bulbs, including halogens and LEDs. Just screw your current lightbulb into the emberlight base, then configure the WiFi connection via your smart phone. Taking advantage of Android or iOS technologies, emberlight owners can control lights and set timers within their homes using Bluetooth, or from anywhere in the world using WiFi.

Emberlight can even recognize when you and your phone are approaching the house and turn on selected lights, meaning you'll never need to come home to a dark house again. Have you ever wished you could group your dimmable lights together, controlling user-created sets with just one button? Emberlight can do that, too. Finally, emberlight users can program their lights to gradually brighten as they awake, creating the ultimate morning experience.

Emberlight is shipping now in a variety of packages, starting at \$49.



CowTech Ciclop

OPEN SOURCE 3D SCANNER

cowtechengineering.com



In less than 30 minutes, you can make and assemble your very own 3D scanner, the CowTech Ciclop. The CowTech Ciclop features a scan volume of 200 millimeters wide by 205 millimeters high, requires only two to eight minutes to scan an object and produces scans with up to .5 millimeter precision.

Print Ciclop's plastic parts on your own 3D printer, in any color or resolution, and assemble the printer. Then, place the object you want to replicate on the 200-millimeter acrylic turntable and start scanning. The turntable rotates as line lasers flash, tracing the object's outline. The Ciclop's camera then takes over, producing hundreds of thousands of points in space. These points are stitched together, in effect replicating the object.

Before deciding to purchase CowTech Ciclop, know that the technology does not yet support the exportation of .STL files, which are generally the most compatible with 3D printers. CowTech does, however, have a number of recommendations for programs that can bridge the gap between the files produced by the scanner and the format needed by printers.

The CowTech Ciclop is available on Kickstarter for \$99. It begins shipping this month.

QuietOn

COMFORTABLE QUIET

quieton.com

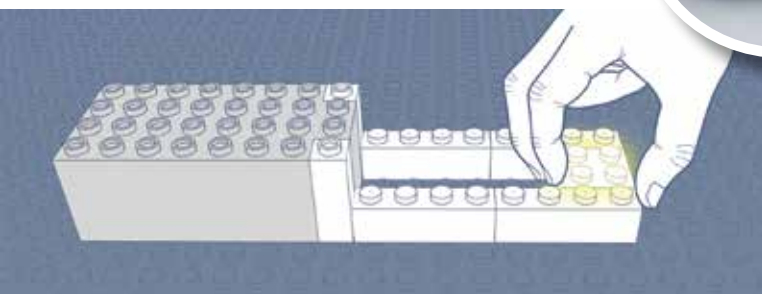
The amount of time you spend asleep affects your mood, your health, your productivity and, generally, your entire outlook on life. Unfortunately, there are many obstacles that threaten to block light sleepers from the rest they need. QuietOn is the noise-cancelling answer to light sleepers' restless nights.

QuietOn is a product that blocks sound, including lower frequency sounds that often defy earplugs. In fact, QuietOn provides the same quality noise cancellation as over-the-ear headphones but does so with far less material. The earplugs fit comfortably in wearers' ears so that they can be worn inconspicuously while allowing ease of rest on a pillow. Not only can QuietOn be worn to improve sleep, but it can also be used to improve concentration in noisy environments or reduce the stress that can accompany boisterous situations.

The QuietOn case, which is portable and sleek, doubles as a charging unit. QuietOn powers on immediately after being disconnected from the charging unit and relies on batteries that can last up to 50 hours between charges.

QuietOn ships in June and is available in packages starting at \$130. All packages include at least two QuietOn tips, one for larger ears and one for smaller ears.





BRIXO Building Blocks

WHIMSY MEETS PRACTICALITY

getbrixo.com

Although this product may look like LEGOs, it is so much more than plastic blocks.

BRIXO was created for designers, engineers, architects, developers or anyone with an active mind and a curious disposition. BRIXO can be used for whimsical purposes (creating a sound-activated treat dispenser), practical purposes (transforming your home into a smart house), educational purposes (teaching your child about electrical circuits) or design purposes (building a small-scale prototype of your next invention).

BRIXO is comprised of three different types of bricks: a trigger block, a connector block and an action block. Trigger blocks set an action in motion in response to sound, light and other blocks—or almost anything if you have enough technical knowledge. Action blocks are outfitted with LED lights and motors, enabling them to move, spin and light up once triggered. Connector blocks connect the trigger blocks to the action blocks, funneling electricity among them. BRIXO is also equipped with a Bluetooth sensor that enables you to wirelessly connect your phone to your building blocks, thereby setting them in motion with the touch of a button.

BRIXO ships October 2016. The standard kit includes one battery case, one motor block, 53 blocks of varying size, two LED lights, one light switch, one sound switch and one proximity switch. Prices begin at \$35.

“Be alone, that is the secret of invention;
be alone, that is when ideas are born.”

—NIKOLA TESLA



Edible Tableware

CREATIVE SOLUTIONS TO EXCESS WASTE

bakeys.com

Sometimes it's just not possible to avoid using disposable tableware, such as at fast-food restaurants or large family outings. With landfills growing larger and larger, however, Sarah Munir came up with a solution to plastic spoons that should appeal to even the most discriminating picnic planner: edible cutlery.

Munir has created a line of spoons made from rice, wheat and sorghum flours. The spoons contain no high-fructose corn syrup, no preservatives and are 100 percent organic. What's more, they're available in a variety of flavors, including sugar, ginger-cinnamon, ginger-garlic, cumin, celery, black pepper, mint-ginger and carrot-beetroot.

Munir eventually hopes to add all manner of tableware, including cups and plates, to her line, as well as to offer a wider variety of flavors. The products are not only edible but are also entirely biodegradable, which means that even if you are not in the mood to eat your spoon, you can rest assured that it will not take up space or poison the Earth in a distant landfill.

Edible cutlery is shipping now. A pack of 100 spoons in assorted flavors can be ordered from Kickstarter for \$10.



GAME CHANGERS

THE MEN WHOSE IDEAS SHAPED THE MODERN WORLD

BY ELEANOR MERRELL

**Karl Benz, Gottlieb Daimler
and Wilhelm Maybach**

AUTOMOBILE

Like many inventions, the creation of the automobile was a group effort, as inventors who spanned across time and place built on the ideas of those who came before them. However, officially, the credit oscillates between Karl Benz and partners Gottlieb Daimler and Wilhelm Maybach.

On January 29, 1886, both Benz and Daimler's team filed for patents for two different versions of gasoline-powered automobiles. Benz's version (German Patent No. 37,435) had three wheels, an integrated chassis and an internal combustion engine. Daimler and Maybach's version (U.S. Patent No. 349,983), on the other hand, featured four wheels, a gear-shift system and a high-speed engine. While both inventors made important contributions to the gas-powered automobile, Benz's prototype ultimately incorporated more features that can be found in automobiles today. As a result, he is frequently credited with the birth of the modern automobile.

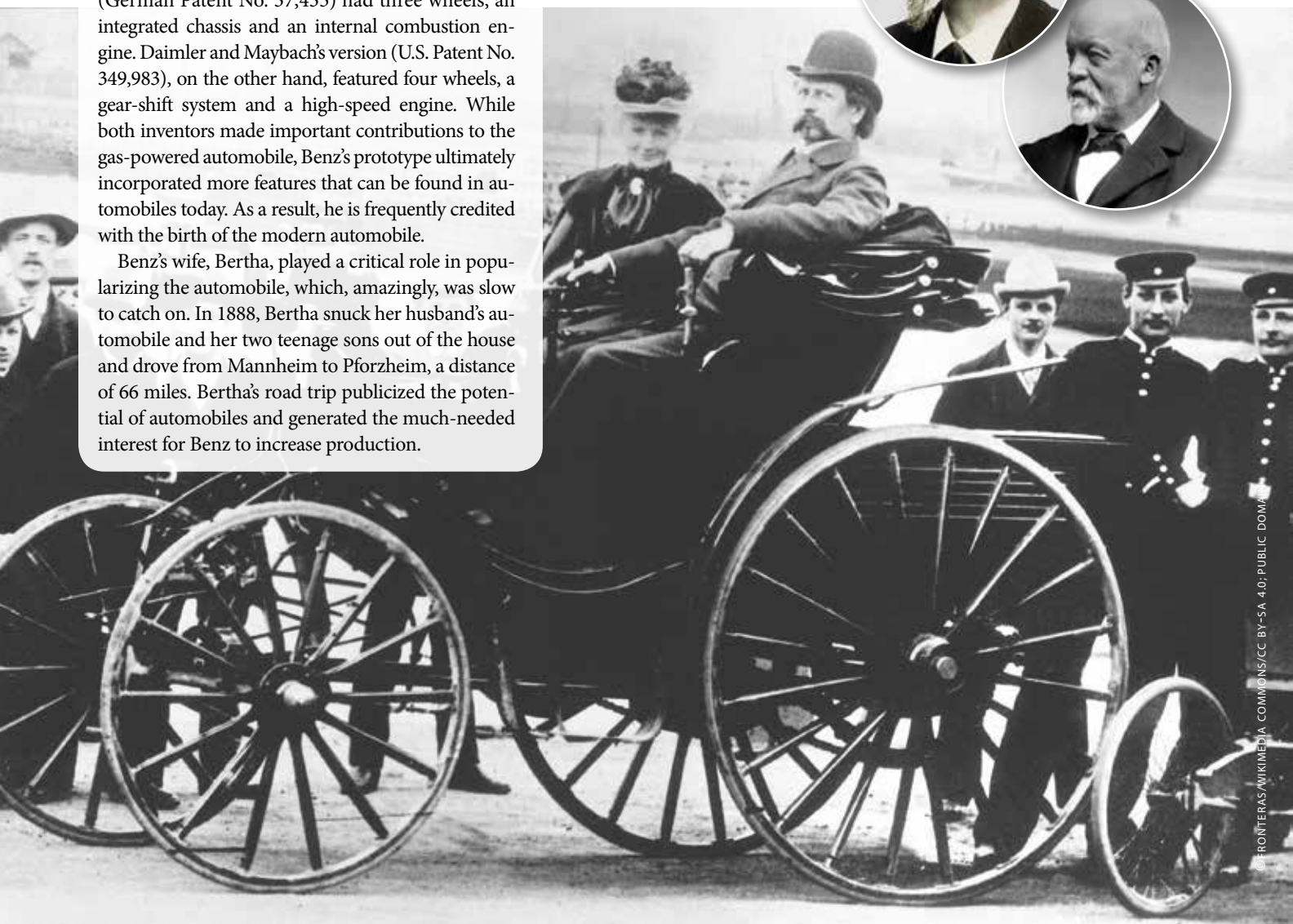
Benz's wife, Bertha, played a critical role in popularizing the automobile, which, amazingly, was slow to catch on. In 1888, Bertha snuck her husband's automobile and her two teenage sons out of the house and drove from Mannheim to Pforzheim, a distance of 66 miles. Bertha's road trip publicized the potential of automobiles and generated the much-needed interest for Benz to increase production.

In the spirit of National Inventors Month, *Inventors Digest* takes a look at a few major innovators whose ideas shaped the modern world.

Wilhelm Maybach

Karl Benz with his wife, Bertha Benz,
in a Benz Victoria, model 1894.

Gottlieb Daimler



Sir Tim Berners-Lee

WORLD WIDE WEB

In 1989, Tim Berners-Lee quietly changed the world when he came up with the idea for the World Wide Web. While working at the European Organization for Nuclear Research in 1980, Berners-Lee created a program called Enquire that, using hypertext, enabled him to store information regarding fellow researchers and their scientific works. Through his experience with Enquire, Berners-Lee realized the potential of a technology that could link information across computers, regardless of those computers' softwares, so, in 1989, he submitted a formal proposal to CERN to realize his idea. CERN responded slowly and unenthusiastically, prompting Berners-Lee to proceed independently.

By the mid-1990s, the World Wide Web was not only up and running but was also widely used. To ensure that the Web remained both free and public, Berners-Lee founded a consortium to govern web activity. It continues today.



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Martin Cooper

CELL PHONE

Reginald Fessenden made the first wireless phone call in 1900 using radio waves sent from one tower to another. Forty-seven years later, William Rae Young, an engineer working for AT&T, suggested that radio towers could be rearranged to enable a telephone network that would allow calls to be passed among towers as callers changed locations. More than 25 years later, while engineers at AT&T worked to transform Young's ideas into the first car phones, Martin Cooper, who was working for Motorola, built the first portable cell phone. What the first call made on a cellular phone reveals about Cooper is that he was a rascally fellow. In April of 1973, Cooper took his new invention to the streets of New York City and publicly called Joel Engel, who was directing AT&T's cellular program. Cooper was careful to inform Engel of the means by which he was calling him.

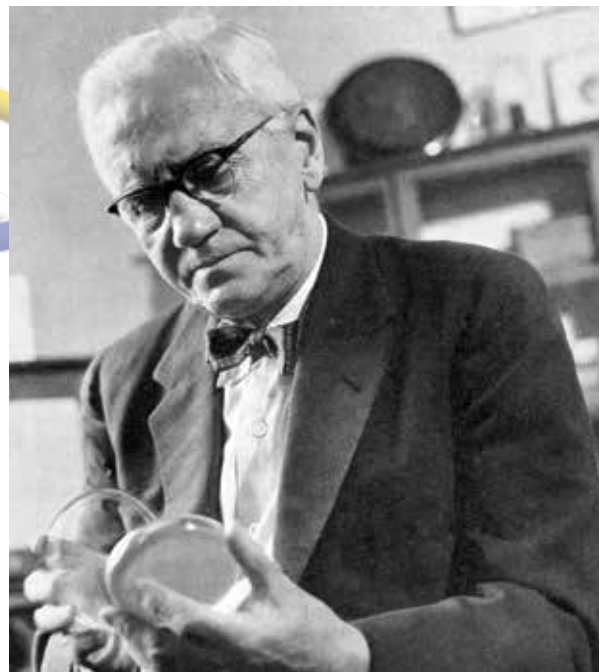
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Alexander Fleming

PENICILLIN

In the autumn of 1928, Alexander Fleming discovered one of medicine's first antibiotics: penicillin. Fleming, who worked at St. Mary's Hospital in London, entered his lab after a summer vacation to find mold rather than a bacteria called *Staphylococcus aureus* growing in some of his petri dishes. Intrigued, Fleming placed a dish under his microscope and learned that a substance excreted by the mold prevented the growth of the bacteria. Fleming identified this substance as penicillin and published his findings with the recommendation that researchers attempt to isolate the penicillin and further investigate its therapeutic applications.

Research directed by Howard Florey and Ernst Chain continued at Oxford University for more than 10 years. Finally, in 1941, penicillin was injected into a human for the first time with incredible results. Thus began the era of antibiotics.



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Johannes Gutenberg

PRINTING PRESS

Gutenberg's name is synonymous with the printing press, although the first movable type was created by Bi Sheng in the 11th century. Sheng used baked clay to create movable characters, and a mixture of wax, resin and ashes to create ink. Over time, movable type technologies could be found across China, as well as in Korea and Japan. These technologies appeared in a variety of forms with different materials comprising the ink and characters.

Four centuries after Sheng created the first movable type, Johannes Gutenberg, a German goldsmith, expanded on Sheng's invention, creating the first device that could allow for the mass production of books and documents. Unlike the Asian movable types, Gutenberg's technology included a mechanism that automatically stamped the press's characters onto paper. As a result of Gutenberg's efforts, literacy rates across Europe spiked, and information became exponentially more accessible.

Elias Howe, Jr.

SEWING MACHINE

In 1844, Elias Howe, Jr. created a working prototype of a practical sewing machine. Howe's machine relied on a feature called a lockstitch, which was created by a needle pushing through fabric to form a loop on the needle's opposite side. A shuttle then inserted a second piece of thread into the loop, forming the lockstitch. Howe patented his invention in 1845, then scheduled a host of demonstrations in America, hoping to show the utility of mechanised sewing and arouse interest in his machine. Unfortunately for Howe, tailors across the country remained skeptical and he remained profitless.

Howe briefly tried his luck in Europe but returned to the United States empty-handed. Upon his arrival, he learned that his sewing machine was now widely used, yet he had not been compensated. Another inventor, Isaac Singer, had created a sewing machine in which the needle moved up and down, rather than side to side as did Howe's. It was also powered by a foot treadle rather than a hand crank. Ultimately, Singer's model, not Howe's, caught the interest of the textile industry. Because Singer's device relied on the lockstitch method designed by Howe, however, it infringed on Howe's patent, causing Singer to lose a protracted lawsuit in 1854.



Sir William Siemens

ELECTRIC FURNACE

The electric furnace was first demonstrated by Sir William Siemens at the Paris Exposition in 1879. Siemens used carbon electrodes to create an electric arc over crucibles containing iron. The arc was able to reach over 2,800 degrees Fahrenheit, which is the temperature at which iron melts. Siemens' contraption could liquify one pound of iron in an hour.

Many industries, including transportation, chemical and food-processing, owe their efficiency, if not their existence, to Siemens' initial foray into electric furnaces.



Wilbur and Orville Wright

AIRPLANE

Brothers Wilbur and Orville Wright became household names when, on December 17, 1903, they became the first individuals to fly an airplane. Emerging from a modest background, the brothers received very little scientific training but were autodidactic, and, Orville especially, had a natural curiosity and knack for mechanics. The brothers jointly operated two businesses: a printing company and a bicycle repair and manufacturing shop. These businesses not only supported the brothers' day-to-day expenses but also were lucrative enough to fund their efforts to invent a flying machine.

In the 1890s, the brothers perused as much research as they could access to get a sense of what was working and what was not working in the aeronautical field. Based on

their readings, the brothers identified the primary problems with the machines previously built: propulsion, wings, balance and control. Gradually, the brothers addressed these flaws, building the Wright Kite in 1899 and three gliders from 1900 to 1902. With each new iteration of their vision, the brothers carefully recorded and evaluated test flight data that they then incorporated into their next designs. By 1903, the Wright brothers had designed, built and flown the first controllable, powered airplane.

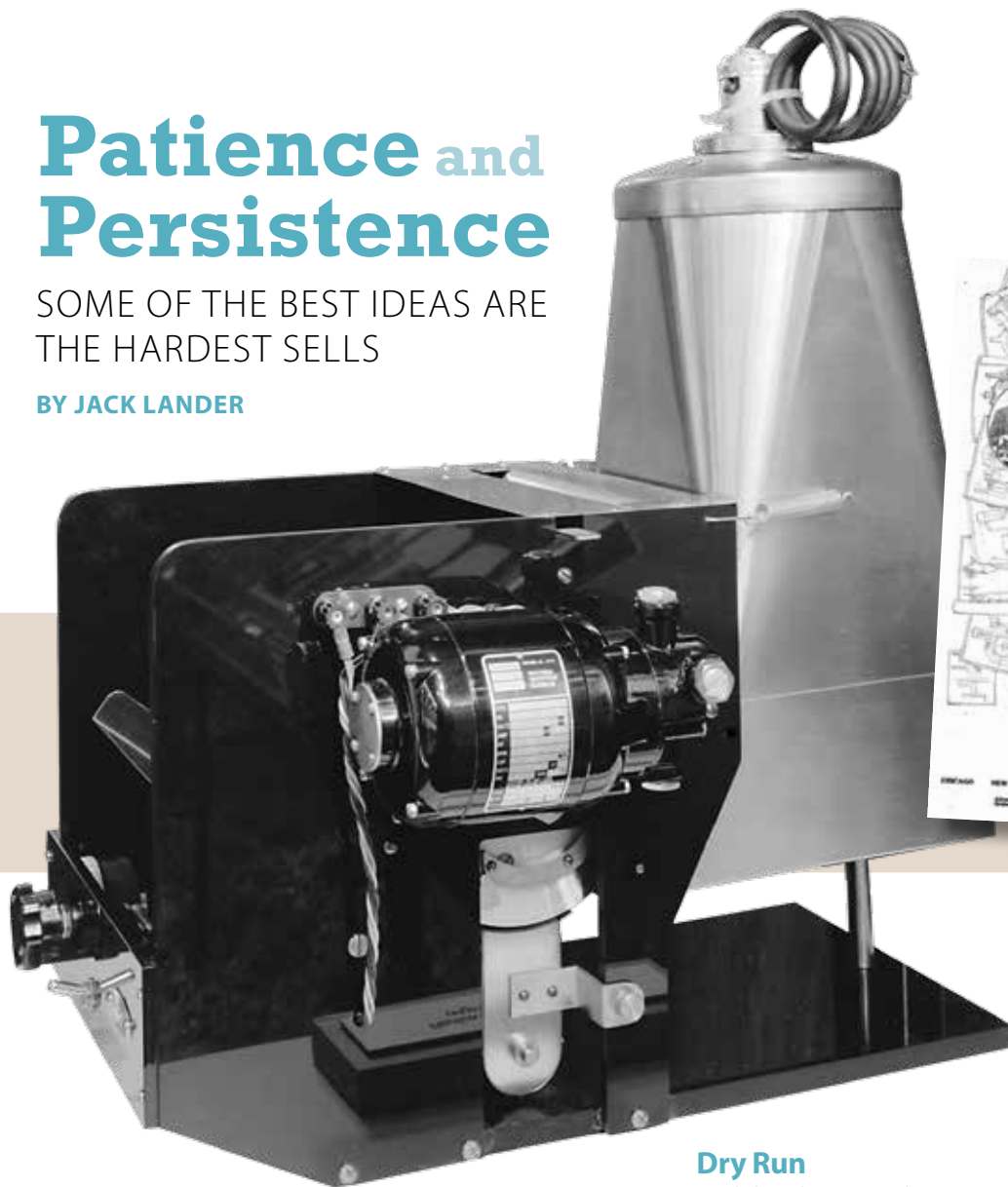
The brothers applied for a patent in 1902, when they began to believe that they had made significant advancements in the aeronautical field. In 1906, the brothers received U.S. Patent No. 821,393 for their 1902 glider, which was a crude draft of their 1903 airplane. 🛩



Patience and Persistence

SOME OF THE BEST IDEAS ARE THE HARDEST SELLS

BY JACK LANDER



A 1920 Commercial Camera Company advertisement for Photostat in *American Machinist*.

A replica of Chester Carlson's original Xerox copier.

It's hard to imagine how expensive and inconvenient running an office might be without a machine to make instant copies. At a cost of 4 cents each, copies are a bargain.

Pretend that you are a young office worker in 1958. Your boss tells you he needs a copy of an important legal document. You run out to Staples. Wait, there is no Staples. Okay, you run out to the local Photostat® service. The clerk puts the document on a copy board and copies its image photographically. Because the image is passed through a reversing prism, it appears forward reading on the photo paper. The exposed paper must then be developed and fixed using wet chemicals. Finally, since the process yields white printing on a black background, if you want black printing on a white background, you need to take a photostat of your photostat, then develop and fix it. The cost of making the copy today would be about \$12.

Dry Run

Luckily, Chester Carlson set out to invent a copy process that developed a dry print on ordinary paper. By education, Carlson was a physicist, who worked at the Bell Telephone Company for a few years, first as a researcher and later as an assistant to the company's patent attorney. All was well until he was fired for working with a few other Bell employees outside the office to develop their own business.

He then found a job at the electronics firm P. R. Mallory Company, known these days as Duracell, and attended night school at New York University. Within three years, Carlson had earned a degree in law as a patent attorney.

Carlson was promoted to a managerial position within Mallory's patent office, where he observed first-hand how impractical the copying process was. Although Carlson patented some of the 400 ideas he kept in his inventor notebook, his main interest was practical copying. Carlson developed a dry duplicating process, which he named electrophotography. The process can be explained simply:

1. An insulated plate, kept in total darkness, is charged with static electricity.
2. The plate is exposed to the image of the item to be copied. The light falling on the plate discharges the white areas on the image. The black print area, which is not exposed to light, retains its charge on the plate.
3. A fine carbon powder mix is dusted over the surface and sticks to the dark areas that are still holding the electrostatic charge.
4. A piece of plain paper is electrostatically charged with the polarity opposite the plate charge, and the carbon dust transfers to and adheres to the paper.
5. The paper is heated to set the carbon mix, which includes a bit of powdered resin. The resin melts and “glues” the carbon to the paper. A copy is born.

IBM rejected Carlson’s process, no doubt, because the company’s marketing team couldn’t grasp the immense potential of a dry, plain-paper copier.

Pitching the Process

Carlson’s crude model certainly was not the Xerox® machine we know today, but he did receive U.S. Patent No. 2,297,691 in 1942 for “Electrophotography” and set about finding a company to develop a machine based on his process. The road was long and difficult, partly because the copying process seemed too challenging to automate. Carlson spent several years pitching his process to more than 20 companies, including IBM, and was turned down by every one.

Carlson’s luck changed when a man named Russell Dayton visited the company where Carlson worked at the time. Dayton was ecstatic about the prospects of Carlson’s invention and pitched it to his company, Battelle Memorial Institute, which decided to undertake developing Carlson’s idea. Once again, however, product development dragged.

Finally, in 1948, the Model A copier was announced. It involved 39 steps, mostly manual, to make a copy. The Ford Motor Company began buying the large, awkward, semi-automatic machines to make masters for lithographic printing machines, which saved Ford a great deal of money and time.

Buoyed by the success of the sales of Model A, a program for streamlining the process progressed, and, in 1959, Model 914, the first practical Xerox® machine for offices, was released. The leap from Carlson’s crude manual demonstration prototype to a 30-page-per-minute copier is nothing less than a miracle of engineering. Even modern-day laser printers employ substantially the same process as their Xerox® predecessor, but instead of

creating a camera-like photo image of the item to be copied, a laser scanning system is employed.

Carlson is to copying what Edison is to the light bulb and Bell is to the telephone, yet few people are aware of his name. Carlson died in 1968 at age 62 before knowing of the massive success of personal printers or that a 30-sheet-per-minute electrophotography-based printer, like the Brother HL-L2300D, could be purchased for under \$100.

Lessons Learned

So, what lessons can we learn from Chester Carlson?

1. Complicated inventions based on unknown processes are tough sells. For reasons that had nothing to do with electrophotography, Carlson was ready to give up when he met Russell Dayton. Think long and hard before taking on complex inventions and remember Mark Twain’s advice: “It’s easier to stay out than to get out.” (Twain invested in an automated typesetting machine, lost a substantial fortune and had to move his family to Europe to escape his creditors.)

2. Patience and persistence are essential qualities once you have perfected the basics of your invention. Rejection is difficult for most inventors, but smart failure is a natural part of the ongoing invention process. Finding the balance between persistence and retreat is not easy, but only a damned fool risks losing everything, including his beloved spouse, due to fatalistic heroism.

3. Quantity improves the odds. Each time we pitch an invention and are rejected, we learn a bit more about how to present our invention to the next person. But we must create the future for those folks who don’t have the imagination to foresee it.

IBM rejected Carlson’s process, no doubt, because the company’s marketing team couldn’t grasp the immense potential of a dry, plain-paper copier. Carlson may have convinced IBM if he had surveyed the potential users of the eventual Model 914 first, quoted their responses in a sell sheet and then estimated the number of 914 copiers that would be sold and the revenue produced.

Selling is an intimate associate of inventing, and you don’t have to be a carnival pitchman to practice it. As the legendary salesman Elmer Wheeler urged, “Don’t sell the steak. Sell the sizzle.” 🍴

Jack Lander, a near legend in the inventing community, has been writing for *Inventors Digest* for 19 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.





ABOVE: Linsey Ebuén invented goumimitts when she couldn't find mittens that would keep her infant daughter from scratching herself.

RIGHT: Lili Yeo and Linsey Ebuén, the co-founders of gougoumiks, pose with their children Iliana, Ariana, Maliya and Kaiya.



©LEAH VERWEY PHOTOGRAPHY

Ready to Sell

MARKETING STRATEGIES FOR MOMPREENEURS **BY DON DEBELAK**

Babies and young children are sources of inspiration for a growing number of innovative moms. While baby boutiques, sales representatives and trade shows remain marketing mainstays, social media connections have made it possible to turn a popular product into an instant commercial success. The three women in the following story used a variety of marketing strategies to introduce their products and create successful businesses.

Mighty (Tiny) Mittens

Linsey Ebuén worried about her new baby scratching herself with her long fingernails and had trouble finding mittens that would stay on her baby's busy hands. Ebuén decided to create her own solution and spent several years working on a design for baby mittens.

A project manager for Intel at the time, with no product development experience, Ebuén wasn't sure how to introduce her invention to the market. Luckily, Ebuén's friend Lili Yeo worked in the women's sportswear and footwear division at Nike and knew a great deal about commercializing products. The two decided to form a partnership, and in 2011, founded gougoumiks.

The company has since expanded its product line and, in addition to gougoumimitts, offers hats, boots and gougoumijamms. The gougoumiks division, which includes all retail products, has tripled its sales each year since 2011, with annual sales now well over \$500,000.

Alternate Plans

Yeo's outsourcing experience proved beneficial in finalizing the mitten design and arranging production. The two women wanted to manufacture in the United States but found they couldn't get the prices low enough to be competitive in the market, so they resorted to overseas production.

Ebuén and Yeo's original plan was to attend the industry's leading trade show, the ABC Kids Expo, in 2011, but their initial shipment wasn't delivered on time. So, they switched to plan

Success breeds success, and with a firm customer base, the company had no problem convincing new retailers to take on the product line.

B, selling direct to baby boutiques. Ebuen went door-to-door, samples in hand, to every baby boutique in the Beaverton, Ore., area. After she experienced a 100 percent buy rate, the partners couldn't wait to expand their market.

Reveling in Retail

Yeo talked to several sales representatives, but the reps, who generally won't carry a product unless they can make a commission of at least \$5,000 to \$10,000 a year, weren't interested in a one-line company. The partners decided, instead, to make sales kits that included information about the product, highlights of the company's sales efforts to date (with an emphasis on stores that were carrying the product) and an offer to send a sample to any store interested in carrying the product. Ebuen and Yeo then sent these kits to baby product retailers that they had identified via local phone directories and Internet searches.

Retailers started to buy as soon as they got their hands on a sample. By the time the 2012 ABC Kids Expo came around, goupikids had more than 100 retail customers. Success breeds success, and with a firm customer base, the company had no problem convincing new retailers to take on the product line.

Working the Web

With their mittens now in stores, the women had to determine whether they should sell the product on the company website. With the understanding that retailers don't like their suppliers selling their products on the Internet below the retail price, to get nationwide coverage, goupikids opted to sell online at retail. As a result, the store locator is the most frequently visited page on the site.

The company also launched an aggressive public relations campaign to support its sales efforts. Yeo and Ebuen hired a PR firm recommended by an industry contact to send out press releases and photographs to facilitate company exposure. Yeo doesn't know how much impact the press releases had, but she feels the publicity was instrumental in promoting site visits and landing retailers. The goupikids site now lists 40 websites or magazines that have covered the goupikids product line.



Lisa Pinnell, inventor of the Binx Baby Shopping Cart Hammock, relaxes at the beach with her family.

A Swinging Success

Lisa Pinnell is a young mom whose success is largely due to social media. Her company, Binx Baby, started selling the first commercial version of her product—an infant hammock for use in grocery carts—in 2014. Binx Baby experienced sales of \$250,000 in 2015, and Pinnell expects to double or even triple sales in 2016.

To date, most of the sales have been made on the company's website, which Pinnell promotes on Facebook, Instagram and Pinterest. As is typical for most inventors, Pinnell's path to market was fraught with hiccups before her social media strategy took hold.

Making Space

In September 2008, after her second child was born, Pinnell learned that taking a young child and an infant to the grocery store at the same time was impossible. The baby's carrier needed to be set in the grocery cart, and the older child had to sit in the cart's safety seat, which left no room for groceries. Pinnell came to the conclusion that a baby hammock that hung across the shopping cart was the solution.

Pinnell borrowed a shopping cart and started experimenting with product design. She could only work when her children slept, so the project took longer than expected. Two years after she started, Pinnell had a viable product.

Once she had a design in mind, Pinnell hired a seamstress to produce two prototypes and applied for a provisional patent. She then invited friends from her church to test the product. Pinnell was encouraged by the positive comments and made a few improvements based on consumer feedback.

American manufacturing proved too expensive, so Pinnell decided to hire a sourcing agent and explore opportunities in China. After two years of sending samples back and



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With more than 600 preorders, the Shopping Cart Hammock sold out within 30 days.

forth from China to the United States, Pinnell placed her first order for delivery in the fall of 2014.

Pin It

Pinnell's unanticipated marketing plan started when she placed a photo of the product on her Facebook site. One of her friends pinned the picture to Pinterest with a reference to Pinnell's

Facebook site. From there, interest grew rapidly. Moms who knew moms loved the picture of the baby in the hammock. Suddenly, more and more moms were looking at the photograph.

Pinnell was not equipped for the amount of traffic she received, but she moved fast. She set up an email list on her fledgling website for people who wanted to know when the product would be available. She also let people friend her on Facebook and follow her on Instagram, so that when her product was available, she could let them know.

About six weeks before the hammock's delivery date, Pinnell alerted her network by sending emails and posting pictures on

Marketing Matters

TRADITIONAL ROUTES

In addition to boutiques and social media, a third marketing route is to attend trade shows to establish a sales network. You can find retailers and reps, who are frequently the best option for landing large retail chains, at trade shows. Inventors with strong products can also use this approach to launch their lines without relying on baby boutiques or social networking.

ABC Kids Expo

The starting point for every mom (or other baby product inventor) who is thinking about introducing a new product should be the ABC Kids Expo. This show has sections for toys and games, clothes, furniture and, of most interest to mom inventors, a section for mompreneurs. I recommend inventors attend this show before introducing their products to the market. The show offers opportunities to:

- See how products are displayed and priced.
- Meet inventors with new products and get tips from them on finding reps and introducing products.
- Find other inventors who might be willing to partner in a joint marketing effort to cut costs.

- Meet representatives that might be willing to sell the product. You can meet reps in the various booths or at lunch and break tables.

Trade Magazines

The industry has several trade magazines, which also have websites: *Baby Maternity Retailer*, *Baby and Children Product News*, *Baby Shop Magazine*, which includes maternity products, and *Playthings*, which focuses on toys. Trade magazines often have information on sales representatives, but their most useful features are the new product sections, which allow you to send for literature and complimentary products from a variety of companies. The literature often contains the names of representatives in your area, who, if they like your product, will give you tips on how to move forward.

Sell Locally

One of the benefits of the young children's market is that almost every major city has several small shops through which inventors

Pinnell still markets through Pinterest, Facebook and her favorite, Instagram.

both Facebook and Instagram. She received more than 600 pre-orders on her website. Within 30 days, Pinnell sold out of her first order.

Today Pinnell still markets through Pinterest, Facebook and her favorite, Instagram. The only promotional program she runs is on Etsy.com, a site where many moms sell handmade baby items. During a spring giveaway promotion, for example, Pinnell teams up with three other sellers, who post pictures of four baby-related products. To be eligible for a prize, site users have to sign up to follow all four sellers. Pinnell mentions that this is a great way to attract people to follow or friend her.

Pinnell has tried more traditional marketing, such as attending the ABC Kids Expo, where her booth and samples caught the attention of a few retailers. However, Pinnell discovered that the show was not as profitable as her website, where the hammock sells for \$49.95. The key, says Pinnell is that “when moms of infants see my product, they want to buy.”

Don Debelak is the founder of One Stop Invention Shop, which offers marketing and patenting assistance to inventors. Debelak is also the author of several well-known marketing books, including Entrepreneur magazine's *Bringing Your Product to Market*.



can introduce their product. You will have an easier time putting together a rep network to sell your product nationally if you can first prove the product sells locally.

You must be fairly aggressive in marketing to local stores and keep your momentum going to interest sales reps. Typical tactics include either offering products on consignment or on a guaranteed basis, in which inventors agree to take back any unsold products and return funds.

Build a List

Although attending trade shows and perusing trade magazines can help you build a list of possible sales reps, only one out of 20 reps may be willing to sell your product, so you need to start with a long list. Be sure to check out local gift markets at www.giftmarts.com. The reps at these marts often carry children's items.

Note: Visit InventorsDigest.com for a list of 150 rep groups, provided courtesy of One Stop Invention Shop.

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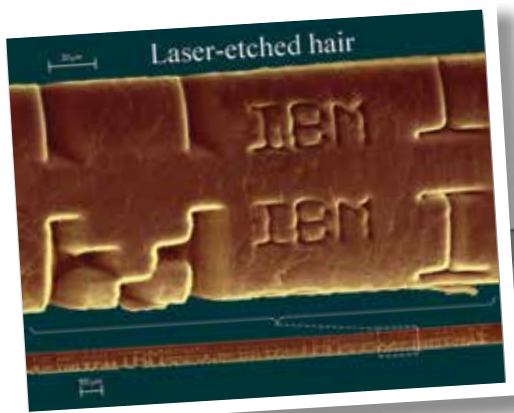
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In the Line of Sight

HOW DR. JAMES WYNNE DISCOVERED EXCIMER LASER SURGERY

This article was originally published February 8, 2016 in Innovator Insights, a blog interview series of the IPO Education Foundation.

For information, visit www.ipof.org.



Above: An electron micrograph with the letters IBM photoetched into human hair using an excimer laser.

Right: The VISX laser refractive surgical system.



How did Flash Gordon and a leftover turkey dinner factor into bringing us better eyesight? Each helped lead Dr. James Wynne, program manager of Local Education Outreach at IBM, to his seminal discovery. In collaboration with his colleagues, Dr. Rangaswamy Srinivasan and Dr. Samuel E. Blum, Wynne found that an excimer laser could be used to create clean cuts in tissue without causing collateral damage to the surrounding healthy tissue. This invention, patented in 1988, claimed the foundational technology on which laser-assisted in-situ keratomileusis (LASIK) and photorefractive keratectomy (PRK) surgeries are based, and changed the quality of vision for millions of people worldwide.

Wynne, who was inducted into the National Inventors Hall of Fame in 2002, had been destined by his family to become a medical doctor. However, with a love of light beams and physics, as a child Wynne was inspired by heroes such as Flash Gordon. After his third year at Harvard University, where he majored in physics, Wynne returned home to Long Island, N.Y., to work for private research company Technical Research Group on projects inspired by Gordon Gould, who is widely recognized as the inventor of the laser. Wynne's summer at TRG convinced him that he should apply to graduate school for physics, rather than medical school.

In Harvard's graduate applied physics program, Wynne was introduced to the work of IBM legends Peter Sorokin and John Armstrong, which ultimately led him to the company's Watson Research Center in Yorktown Heights, N.Y., where he made and patented his most famous discovery to date, and where he still works today.

In the following interview, Wynne discusses how he and his colleagues conceived of this game-changing technology (including the role of the turkey dinner), how patents helped, and why the research community and the public depend on the patent system in order to bring great discoveries like his to the world.

Innovator Insights: How did you come to work with the technology that ultimately led to IBM's patent on excimer laser surgery?

Dr. James Wynne: In 1966, IBM's Peter Sorokin invented the dye laser. Working with him, I got involved in using dye lasers and doing optical spectroscopy—an old field that had done great things but was stale by then, until the dye laser totally revolutionized it. I was promoted to manager of the laser physics and chemistry group, and one of the people who came into my group was Dr. Rangaswamy Srinivasan (I call him Sri for short). Sri joined IBM research at the Watson Research Center when it was



Dr. James Wynne and Dr. Rangaswamy Srinivasan receiving the National Medal of Technology and Innovation for Excimer Laser Surgery from President Obama in 2012.

“First we started irradiating our own fingernails and making patterns in them. Then we irradiated our own hair and made clean patterns in hair. The breakthrough occurred when, the day after Thanksgiving in 1981, Sri brought some turkey leftovers into the lab.” — DR. JAMES WYNNE

brand new, back in 1960, and he studied how chemical reactions were created by light, which is known as photochemistry.

Around the time Sri joined the laser physics and chemistry group in 1976, the excimer laser had become commercially available. “Excimer” stands for “excited dimer.” One of the atoms in an excimer laser had to be a rare gas atom, such as argon, krypton or xenon, which are known to be nonreactive. In the ground state, these atoms will not form molecules. They are considered rare gases because they don’t react with anything else, but if you mix them with a halogen like fluorine or chlorine and create an electrical discharge in the gas mixture, they will form a molecule, or dimer, in the excited state (excimer). When you combined argon with fluorine to create excited argon fluoride, it turned out to be the working substance of a very powerful laser that emitted short pulses of ultraviolet light. We didn’t have a laser like that in our group, so I got the OK from management to buy one, and I encouraged the members of my group to think of ways they might use it.

Sri and his technical assistant, Veronica Mayne-Banton, got some time on the laser and irradiated one of the polymers Sri had been studying. He discovered that each short pulse of light from that laser would remove a miniscule amount of material from the polymer. Sri recognized what was going on, which was that you could create very clean patterns in plastics with

this laser, without any additional chemical processing steps.

Once he understood that, he and I started talking about other applications of the laser. My concept was that, if this laser could make these clean holes in plastics, maybe it could make clean holes in human and animal tissue; I was thinking specifically of skin. I thought it might be a terrific scalpel that would make cuts and remove tissue without producing collateral damage to the underlying and adjacent viable tissue.

To test this, first we started irradiating our own fingernails and making patterns in them. Then we irradiated our own hair and made clean patterns in hair. The breakthrough occurred when, the day after Thanksgiving in 1981, Sri brought some turkey leftovers into the lab. He had a turkey bone with some cartilage on it, and he used the laser to make a very clean incision in the cartilage. He and our colleague Sam Blum, over the next week or two, did some much more careful and quantitative analysis of these findings. Sometime early in December, Sri showed the turkey cartilage sample to me, and I took it into the lab where I was working with a different laser. I took the turkey sample and irradiated it with a conventional laser. Instead of making a clean incision, all I could do was burn and char it. It was the difference between this ultra-clean incision that the argon fluoride excimer laser produced and the burned charred area produced by the conventional laser that was the aha moment for me.



Rodney Hodgson, Peter Sorokin and James Wynne in a laser lab at the IBM Watson Research Center in 1974.

II: Did you decide then to patent it?

DJW: Sri, Sam and I brainstormed and wrote an invention disclosure that we finished at the end of 1981. Then we submitted it to IBM's intellectual property law department. From then on, we were told not to disclose this information to the outside world until the patent was filed, which happened in December of 1982.

In the meantime, we continued to do experiments and decided that if we were making such clean holes in cartilage and nails and hair, we should try it on our own skin. So we got brave and I put the pinky of my left hand in front of the argon fluoride laser beam. I felt no heat and no pain. It was the same feeling as if I had blown a puff of air onto my finger from my mouth. So it looked like we had a pretty good idea.

II: What did the patent that IBM filed claim?

DJW: The patent that ultimately issued in 1988 claimed a new form of surgery on all human and animal tissue. I thought it would be great on skin, and I pictured brain tissue, orthopedics and dentistry. But in no way did we imagine this would be used on eyes. The reason was that the light would not get through the cornea to the retina, and all the laser surgery on eyes that we knew about was being done on the retina.

II: So how did it become the foundational patent with respect to surgery to modify the curvature of the cornea?

DJW: We got lucky. Our patent was filed in December of 1982, so we could now talk about our research, and Sri gave an invited talk at the Conference on Lasers and Electro-Optics in May of 1983 in Baltimore. Attending the conference were two ophthalmologists affiliated with Columbia University, Stephen Trokel and Francis L'Esperance, Jr. They were colleagues but also competitors. They both learned about our work at the CLEO conference, and Trokel got in touch with us and came up to the Watson Lab on July 20, 1983 with enucleated calf eyes. Using the excimer laser,

he worked with Sri and his technical assistant, Bodil Braren, and made clean incisions in the cornea of the calf eyes.

L'Esperance, meanwhile, actually conceived and wrote the first patent application on reshaping the front of the eye by the procedure now known as photorefractive keratectomy (PRK). The work that Trokel did with Sri was published in the *American Journal of Ophthalmology* in December of 1983, and things moved forward from there relatively quickly. By 1987 or 1988, sighted humans were being treated with the excimer laser.

Today, about 33 million people worldwide have had laser refractive surgery with an excimer laser, and about 59 million procedures have been done.

II: How important was getting the patent to this whole process?

DJW: The patent gained important recognition for me and Sri and Sam Blum, but it also laid the groundwork for Trokel's and L'Esperance's work and for the work I'm doing now, which could be even more important. We are currently collaborating with Stony Brook University to perform testing of excimer laser surgery on severely burned skin. All indications so far are that we will be able to remove necrotic tissue caused by burns with faster healing, less pain and less scar tissue formation.

II: Do you think patenting is important for the research community?

DJW: If the cost of developing a practical application of your discovery is significant, you have to raise funds for that or be protected so that other people can't cannibalize what you're doing. The patent system rewards the inventor by giving him or her protection so that he or she can work with whatever is needed to turn it into a practical implementation. When you hear of people buying patents and becoming patent trolls, that maybe perverts the system and gives it a bad reputation, but if you believe in capitalism as promoting innovation, then getting protection for your IP is a very important part of it. You try to have a law in place that will be advantageous to society, and the patent laws I believe are most definitely advantageous to society.

II: What advice do you have for future great inventors?

DJW: First, you have to find something you love. Then, use other people's judgment to find out whether you're good at it. If you love it and you're good at it, go into that field. Chance favors the prepared mind. You have to get good training and then keep your eyes open. 🧐



Innovator Insights is IPOEF's forum for inventors and other IP stakeholders to discuss their work and the role IP plays for them, and to help educate the public on the link between strong IP protection and robust innovation. Read more at www.ipodef.org.

Moveable Feast

NURSING SOLUTIONS FOR MODERN MOMS

BY EDITH G. TOLCHIN

Multitasking seems to be the answer to coping with life in the 21st century. Busy moms and dads are faced not only with hectic work schedules but also with housekeeping, caring for their children and juggling a multitude of extracurricular activities. Taking time to nurse an infant can add pressure to the mix. Enter Angelique N. Warner, who created Nurse 'N Go™, a product that allows for hands-free nursing and gives harried mothers a bit of a reprieve.

I met Warner in 2010 at INPEX, America's largest invention trade show. Warner approached me because I was discussing product safety and China manufacturing. She had concerns about product safety, especially since the Consumer Product Safety Improvement Act had just become law. In the months after the show, I helped Warner address the various regulations surrounding having Nurse 'N Go safely manufactured in China. Six years and several revisions to her prototype later, Nurse 'N Go is ready to launch.

The following is an edited version of an interview with Warner.

Edith G. Tolchin: Please tell us about your background and family.

Angelique Warner: I have a bachelor's degree in psychology from Wheaton College. My husband, Bryan, and I have four beautiful children. My mother lives with us, so we have a full house of seven. We are an active family with our days filled with work, school, sports and church. I am a Realtor, a product entrepreneur, a lunch supervisor at an elementary school, a mentor at Pretty Brown Girl and a greeter at my church.

Nurse 'N Go was developed from a vision I had when my youngest daughter was born. The baby was nursing, the twins were 1 year old, my son was 4 years old, and Bryan and I were serving as house parents, taking care of 14 boys who lived with us at a boarding school. I needed my hands, to say the least. I envisioned a carrier that held the baby for feeding in privacy, and my hands were free. I checked the Internet for a product like this, and there were none. I didn't begin working on my idea at that time because I had 18 children at home and three of them weren't yet in preschool.

EGT: How does Nurse 'N Go work?

AW: Nurse 'N Go looks similar to a baby carrier that is worn over the shoulders and across the chest. Younger infants, 3 to 4 months old, can be carried in the fetal position in the center of the user's body, but they cannot nurse hands-free until they can hold their heads up on their own. Older babies that can hold their heads up on their own are positioned low on either hip to be close to Mom's breast for nursing. A detachable, interchangeable nursing cover for privacy is stored in the front pocket. The sides of the



Angelique N. Warner's Nurse 'N Go™ allows for hands-free nursing.

My goal is to supply moms (and dads) with a high-quality, modern, stylish and comfortable baby carrier for hands-free nursing (and carrying).

Nurse 'N Go is sold in a black muslin drawstring bag and includes a detachable, interchangeable nursing cover stored in the front pocket.



carrier are adjustable to accommodate the recommended “M” seated position for hip support as baby grows. When simply being carried, bigger babies can either be positioned high on either hip with their legs straddling the user’s body or they can be positioned in the center of the user’s body with their legs straddling the user’s body.

EGT: Can a mom really nurse a child, hands-free while tending to chores, other children and life in general?

AW: Yes. Beginning at around 3 to 4 months of age, baby can nurse while Mom is doing other things. Nurse 'N Go is designed for hands-free nursing during light activities and walking, nothing rigorous.

EGT: How easy is it to take baby out of the carrier when it’s time for burping and diaper changing?

AW: Very easy. You unbuckle one of the carrier shoulder straps and simply lift the baby out.

EGT: What is the product made of? How durable is it? What about big babies or babies that nurse longer than one year?

AW: The product is 98 percent cotton and 2 percent spandex stretch denim. Denim is extremely durable. The Nurse 'N Go HipHugger model holds an infant up to 35 pounds. I launched this design primarily because of its longevity of use.

EGT: Can / should dads use the product as well? If so, how?

AW: This baby carrier is ideal for dads, which is why I designed it using black stretch denim with a black leather logo label. It is gender neutral for Mom, Dad, or baby boy or girl. The detachable, interchangeable nursing covers are made from 100 percent cotton flannel with geometric or animal prints, which, again, are gender neutral. The nursing cover can be used to lay the baby on when changing a diaper. It can also be used to swaddle baby or to throw across your shoulder when holding baby. Mom or Dad can also use the nursing cover to shield baby from the elements. Each carrier is sold with one nursing cover; other fashionable designs are sold separately.

EGT: How did you create your prototype? How many versions did you have before you got it perfect?

AW: The original Nurse 'N Go design took seven years to perfect. It was my first attempt at designing anything, and I neither sew nor draw. I had to rely on describing my vision to seamstresses. Through



continuous trial and error, design and re-design with five different seamstresses, I found the perfect design. I was unable to launch at that point early last year due to a lack of funding. In 2014, I had a vision at 3 a.m. about another carrier design, but I didn't work on it because I intended to launch my original design first.

In 2015, I had another vision at 3 a.m. for three more carriers I would design. I took out my mom's sewing machine, and we sewed rough prototypes of each carrier as best we could, then took them to my aunt to create a cleaner version of each. I then met with my mentor, Andre Hughes of Powered by Action, and his team, and they, along with the moms who accompanied me for a demonstration, all agreed that HipHugger was the carrier to launch first because of its longevity of use. After that meeting, I focused on Nurse 'N Go HipHugger. I had fittings with more moms and babies, and tweaked the design two more times until I perfected it. At that point I had a manufacturer in Chicago make my working prototype. I am still using that manufacturer to make my first run of 200 carriers.

EGT: Is Nurse 'N Go patented?

AW: I have a provisional patent-pending status.

EGT: Are you working with an overseas factory? What types of obstacles have you had to overcome?

AW: I worked with a great manufacturer in China to tweak and re-design my original prototype. My mentor has a relationship with this manufacturer, and as a favor to him, the manufacturer was willing to work with me as I finalized my original design. They were even willing to do a minimum order of 1,000 carriers instead of the traditional MOQ of 10,000 units. However, after I decided to shift gears to work on HipHugger and do a very small first run of 200 carriers, I had to use the Chicago manufacturer. I still plan to use the China manufacturer when I move to larger quantities.

EGT: What safety issues, if any, were involved concerning the Consumer Product Safety Improvement Act? How important is safety/production testing for your type of product?

AW: Ensuring product safety for a baby carrier is paramount to success. Ensuring the product is made using sturdy materials, for example, fabric, buckles and webbing. Ensuring proper safety labeling is visible on the carrier and manual. Ensuring there is a registration card attached to each product. Ensuring the product



The Nurse 'N Go HipHugger allows users to carry an infant that weighs up to 35 pounds.

is tested and passes safety and labeling requirements. These and obtaining limited liability insurance are essential.

EGT: How is your product packaged? Did you design the packaging?

AW: My product is sold in a black muslin drawstring bag, which I designed using my logo on each side of the bag. The bag is reusable.

EGT: You launched Nurse 'N Go on January 31, 2016. How are you selling the product?

AW: I am selling on my website but will pursue sales on Amazon.com and Wayfair.com, as well as in local boutiques, if

I don't sell my first 200 carriers through my website and word of mouth.

EGT: What are your goals for this product?

AW: My goal is to supply moms (and dads) with a high-quality, modern, stylish and comfortable baby carrier for hands-free nursing (and carrying). I would love to license my product after my initial sales. I have a contact who will be able to initiate the conversation with a large baby company. I'd love to stay on board with that company and launch my other Nurse 'N Go designs through them.

EGT: Can you share what you have learned or offer any words of encouragement for readers of *Inventors Digest* concerning all phases of product development?

AW: I encourage them to never give up. Though the road may be hard and rough, the reward is greater for the one who endures to the end. If you have a vision, honor it by giving life to it. It is better to have tried and failed than to never have tried at all. I've learned that you are the only one who can make your dreams come true. One would wish for someone else to catch your vision and run with it on your behalf and for your financial gain. but that isn't reality. You have to put feet to your faith to see what the end will be. ☺

Edie Tolchin has contributed to *Inventors Digest* since 2000. She is the author of *Secrets of Successful Inventing* and owner of EGT Global Trading, which for more than 25 years has helped inventors with product safety issues, sourcing and China manufacturing. Contact Edie at egt@egtglobaltrading.com.



Maker's MeetUp



U.S. MANUFACTURING SOLUTIONS FOR STARTUPS AND PROS

Row

BY JEREMY LOWSAW

One of the biggest hurdles between your product and the market is sourcing. Finalizing a design for a new product is a massive task, but the challenges do not end there. Locating a manufacturer with the right equipment to produce the product at a price that makes business sense can take months. Despite the distance and the language barriers, it is common for firms to opt for overseas factories to take advantage of their more favorable labor rates.

Maker's Row, a startup based in Brooklyn, is looking to change all that. The company has created a subscription-based Web database and education platform to help American designers and corporations find domestic manufacturing solutions. Factories pay a fee to be listed, and companies pay a monthly fee to have access to the list of factories and in-house industry experts who help guide the process, which is particularly valuable for new or emerging brands. In addition, Maker's Row takes no commission on any deal resulting from a partnership forged on the site.

A six-step process outlines the path to production, and there are a plethora of videos and articles that explain every step. Experienced corporations will find the site boasts over 10,000 domestic factories that are easily searchable and can help ease the transition from overseas to domestic production. The site currently only lists manufacturers for clothing, accessories and home décor but Maker's Row has plans to expand to other product categories in the future.

Maker's Row is the brainchild of Matthew Burnett and his partner, Tanya Menendez. Burnett, originally from Detroit, watched as his home town was ravaged by the loss of manufacturing jobs.

He went on to study industrial design and graduated from the Pratt Institute in New York City in 2007. Burnett's first job out of school was designing watches for established companies such as DKNY and Marc Jacobs.

No Piece of Cake

Eventually, Burnett decided to set out on his own, and he founded the watch company Steel Cake. In 2010, he landed his first department store account—with Nordstrom—which resulted in placing an order for 10,000 watches with an overseas factory. Unfortunately, chaos ensued.

It took three months to get the order fulfilled, and the shipment was held up in the U.S. Customs and Border Protection office in Alaska. Eventually the goods were cleared, but Burnett found that 2,000 of the watches had a crucial defect and could not be delivered to his customer. Missing the delivery deadline cost Burnett \$20,000. It was the last time he sourced a product overseas. "What I had to do in order to grow at the pace that I wanted to grow was to start producing domestically," says Burnett.

Undeterred by the failure of his watch line, Burnett started a brand of leather goods called the Brooklyn Bakery, and he sourced all of his products domestically. Menendez joined the team to help with sales and operations, but the two found that as they scaled up, it was difficult to find U.S. factories that could produce the quantities they needed. Often, a group that could make handbags would not be equipped to make apparel, which made it difficult to add products to the line. Finding new factories was a time-consuming process because most factories had limited presence on the Web, relying instead on sales reps and word of mouth for new business.

Matthew Burnett and his partner, Tanya Menendez, founded Maker's Row to help American designers and corporations find domestic manufacturing solutions.

PHOTOS COURTESY OF MAKER'S ROW



"I like manufacturing. I like video games. I tried to make manufacturing as close to a video game as possible." — **Matthew Burnett**

Domestic Sourcing

Burnett knew there had to be a better way to find domestic resources. Sites like Alibaba.com made it easy to find overseas factories, but there was nothing like it for domestic manufacturing. Burnett and Menendez decided to create a site on which brands and factories could meet and form partnerships to get more products made in the United States. The vision was to design a site that was transparent and easy to navigate.

"I like manufacturing. I like video games. I tried to make manufacturing as close to a video game as possible," says Burnett.

Neither Burnett nor Menendez had experience building a tech

company, but they got a massive boost when they were chosen to be a part of the 2012 Brooklyn Beta Summer Camp, an incubator program for tech companies. Once in the program, they received seed capital and partnered with a Web developer to get the site up and running.

Maker's Row was launched in November of 2012 and facilitated over 20,000 interactions between brands and factories in the first six months of operation. In 2013, the company received an additional \$1 million to continue its aggressive growth. There are now more than 10,000 factories in the data base, with 100,000 users sourcing products.



CLOCKWISE FROM TOP LEFT:
Tanya Menendez discusses business
with an employee of belt manufacturer
Universal Elliot; Made in USA tags at
MCM Enterprise; Matthew Burnett and
Tanya Menendez talk with a rep from
Citilog, a wood upcycling and repurposing
company; a worker at Brooklyn-based
fabrication shop Anchor and Canvas.

OPPOSITE PAGE, CLOCKWISE FROM
TOP LEFT: One of the many knitwear
manufacturers listed on makersrow.com;
workers constructing leather handbags
at Park Avenue International; a Western
hat maker at Serratelli Hat Co.

Knowledge Is Power

One of the keys to the popularity of Maker's Row is the educational component. Burnett and his team have made it their mission to empower their users with knowledge about the prototyping and manufacturing process so that they can have the smoothest path to market.

"We are huge on education. We want for you, as a brand, whether you have been producing overseas or if this is your first time producing, to get you to produce in the United States," says Burnett.

The backbone of the educational process is comprised of six stages of sourcing listed on the homepage. The page gives each brand a graphical and easy-to-understand path from ideation to sampling to final production. Through a section of the site called "The Academy," users can sign up for free multi-day email courses

about manufacturing, such as "Quality Control 101" and "Make Your First Apparel Sample." The Academy spills over to the company's YouTube channel, which is populated with how-to videos and profiles of successful brands that have made use of Maker's Row for sourcing. The main site also has a treasure trove of blogs devoted to the manufacturing process and issues related to startups.

In the same way that the slow food movement has demanded and promoted locally sourced foods, Maker's Row is facilitating the domestic production of consumer products. The United States has a strong manufacturing sector that produces high-quality goods quickly, but factories have been notoriously difficult to find. Maker's Row is helping to break down the barriers that have kept people from sourcing goods in the United States while also providing valuable educational tools for budding and established companies. 📦

PROTOTYPING

LEGO KIDSFEST TEACHES KIDS THE POWER OF COLORED BRICKS

BY JEREMY LOSAW

Building Castles in the Sky





Kids were fascinated with the Big Brick Pile at the LEGO KidsFest in Charlotte, N.C.

We were in a little bit of a funk at my house. My 4-year-old daughter, Harper, and I were at an activity impasse. I usually try to do things with her that involve building or have a scientific bent, but they had become hard sells.

I suggested drawing or painting our Tony Stewart NASCAR model that we call “the princess car,” but Harper showed no interest. We resorted, instead, to putting together puzzles or playing games like Chutes and Ladders. *Surely these activities are not as mind-numbing as playing video games*, I thought, but I was on the lookout for something new and challenging to add to our play routine. When I heard that the LEGO® KidsFest was coming to Charlotte, I jumped at the chance to go.

The LEGO company has a long history of creating great toys for building, and the interlocking pieces have inspired generations of future engineers and architects. Many of my coworkers have at least one story about their formative years that involves LEGOs.

I am no exception. A child of the '80s, I accrued more than a few buckets of LEGOs. I had the standard red, yellow, blue and black bricks, as well as plenty of wheels to create a fleet of cars. I spent many Saturdays building, which surely helped put me on an education path that led to a career in engineering.

LEGO helps foster kids’ innate desire to build, which drove my excitement to get Harper to the show. In the days prior to the KidsFest, I got out one of my old tubs of LEGO bricks, and Harper and I did some building. Although she enjoyed them, she had no idea just how awesome LEGOs could be.

Master Builders

The day before the show, I was able to convince two of the LEGO Master Builders, Dan Steinger and Paul Chrzan, to join me for lunch. It was a great honor, as there are only seven LEGO Master



LEGO Master Builder Dan Steinger teaches young LEGO fans how to construct strong structures.

Builders in the world. They are definitely in the running for the coolest job on the planet. Both Steinger and Chrzan are long-time LEGO employees with a passion for building. They work at the Enfield, Conn., model shop but travel the world constructing LEGO models, participating in LEGO store openings and teaching kids how to put together their own structures.

Steinger is from South Hadley, Mass., and acquired his enthusiasm for LEGOs as an adult while “playing” alongside his children. He has a background in art and sculpture but admits that he is a “hack” in the art world. However, he is no slouch with LEGO. In 2014, Steinger built the world’s largest Darth Vader model in Sydney, Australia, which was made from more than 250,000 bricks.

Chrzan hails from Huntington, Mass., and was exposed to LEGOs as a child. He has a background in sculpture but took a circuitous route to the position of Master Builder, working for a time as a French pastry chef. One of Chrzan’s most memorable experiences with LEGO was getting to build the model that appears at the end of *The LEGO Movie*. He traveled to Hollywood to participate in the filming and taught star Will Ferrell how to interact with the model.



The Creation Nation takes shape.



Harper Losaw's LEGO castle before and after the LEGO KidsFest.

Tour Details

The LEGO KidsFest is an interactive show that celebrates everything LEGO. Included are various LEGO product lines, statues built from LEGOs, technique classes and building challenges. The purpose is to inspire kids of all ages to get building. The tour started in 2009 and has been hosted by more than two dozen cities across North America. Charlotte was the first of seven tour stops in 2016. All five sessions were sold out weeks before the show.

Play Well

It was inspiring to hear about the huge projects, but I was also fascinated to learn the history of LEGO. The original LEGO Group, founded in 1932 by Ole Kirk Kristiansen, made wood-en toys. It was not until the late 1940s that the Danish firm, whose name roughly translates to “play well,” started producing the first interlocking bricks. The original plastic bricks were

hollow on the bottom and, therefore, did not have a good friction lock. Children found they were only good for stacking.

In the late 1950s, the production material was changed to ABS and hollow tubes were added to the bottom side of the bricks. The new design yielded greater locking power, allowing for the construction of bigger models. It also gave the bricks the pleasing snap-together action that is familiar today. Armed with my new-found knowledge of LEGO, it was time to hit the show.

Characters and Creation Nation

Harper and I descended the seemingly endless escalator down to the ground level of the Charlotte Convention Center. As we entered the show, we were met with life-size LEGO sculptures of movie and TV characters: Hulk battling Iron Man, a Star Wars storm trooper, a full-size Lightning McQueen race car and even the Scooby Doo gang. From there, the show fanned out into stations that highlighted the different LEGO product lines and focused on getting kids to build. Steininger and Chrzan manned the Master Builder Lab, where they gave tips on how to create strong LEGO structures.

There was a station for kids to assemble cars and race them down a track. In the Brick Battle Zone kids were challenged to construct the tallest LEGO tower they could build. (Seventy-one bricks was the tallest that I witnessed.) There also was a huge pile of Duplo blocks for the younger kids. At the rear of the exhibit space was Creation Nation, where LEGO staff members laid out a map of the United States and kids built “counties” to complete the map.

Conquering the Castle

Harper and I started out at the Disney Princess station, where a full-size LEGO Cinderella stood guard. We spent a few minutes building our own castle, then moved to *my* favorite area, the monochromatic build. All I could see were 2- by 4-inch purple bricks, the classic LEGO shape. I was amazed at the variety of structures that could be built with just one type of brick.

Toward the end of the show, Harper and I visited the Big Brick Pile. As the name suggests, it was a 30-foot-square area with a huge pile of LEGOs. This LEGO-phile was pleased with the din a few dozen kids made walking through and pushing the colored shapes around. Kids were burying themselves up to their necks in bricks as if the LEGOs were sand. Harper even took a turn burying me.

The LEGO KidsFest was so much fun I didn't want the event to end. On the way out of the show, I took Harper to the gift store, and she picked out a set of Disney Frozen LEGOs. She was much more enthusiastic about the multicolored bricks in the kit than she was about my boring blue and yellow ones. Each night after dinner for five days, Harper begged to work on the castle. After conquering 115 instruction steps in four hours, I had one Arendelle Castle and one very proud kid. 🏰



Whether you have a conceptual idea, stick-figure diagram, full-scale prototype or market-ready product, we want to hear about it.



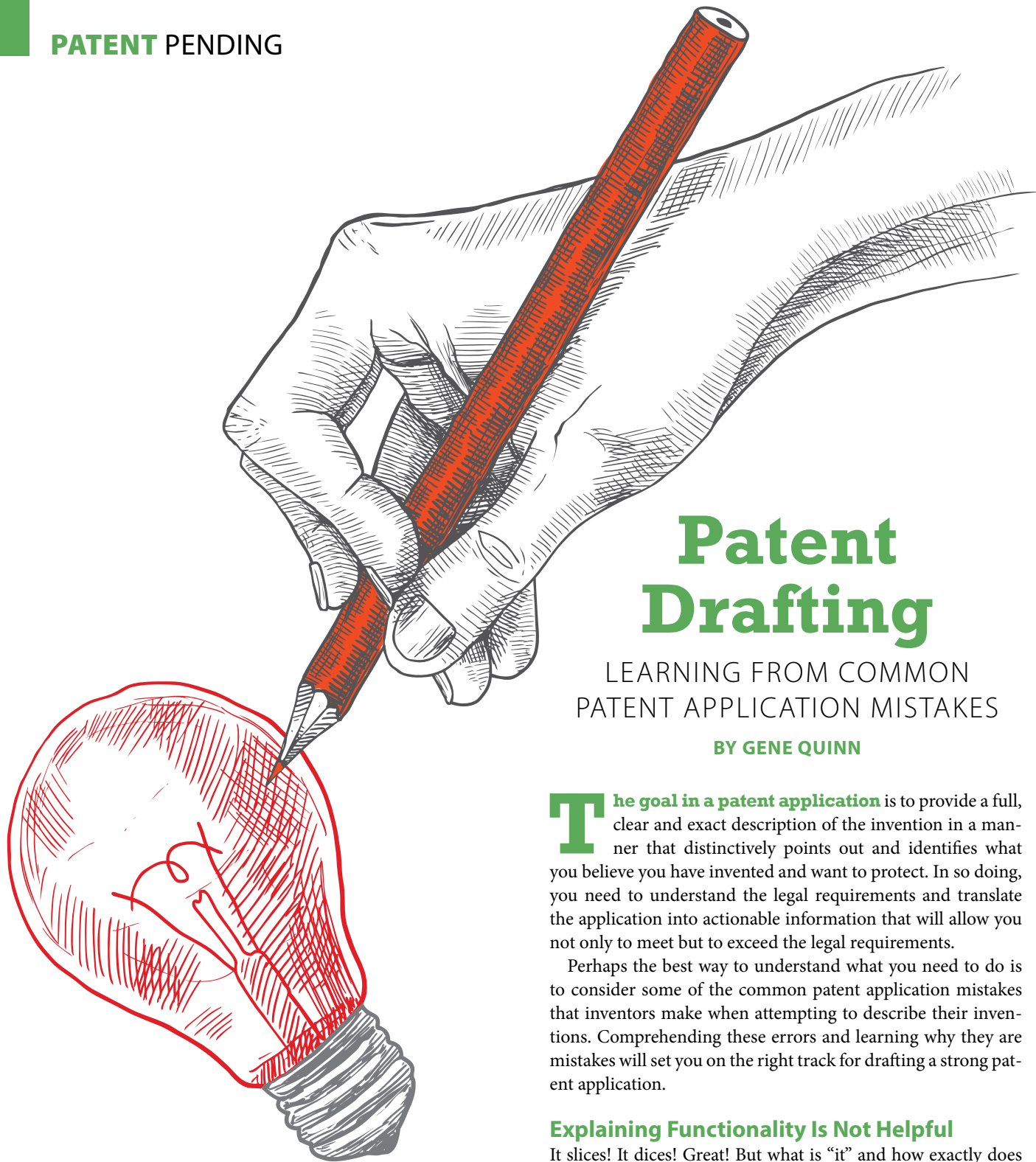
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Patent Drafting

LEARNING FROM COMMON
PATENT APPLICATION MISTAKES

BY GENE QUINN

The goal in a patent application is to provide a full, clear and exact description of the invention in a manner that distinctively points out and identifies what you believe you have invented and want to protect. In so doing, you need to understand the legal requirements and translate the application into actionable information that will allow you not only to meet but to exceed the legal requirements.

Perhaps the best way to understand what you need to do is to consider some of the common patent application mistakes that inventors make when attempting to describe their inventions. Comprehending these errors and learning why they are mistakes will set you on the right track for drafting a strong patent application.

Explaining Functionality Is Not Helpful

It slices! It dices! Great! But what is “it” and how exactly does it slice and dice?

One of the biggest mistakes inventors make is spending too much time talking about what the invention does and very little time explaining what the invention is and how it operates to deliver the functionality described.

Explaining the functionality or the components of an invention is helpful, but explaining something only in terms of function leaves many questions and leads to a disclosure that is not terribly descriptive, which is an absolute nightmare for a patent application.

**Don't assume
functional
descriptions can
replace structural
descriptions.**

For example, assume that you are unfamiliar with a couch. If I described a couch as a piece of furniture that you sit on to watch TV, what would you envision? Perhaps a couch, but you might also picture a chair, a recliner or a love seat. Notice, also, that when I describe the couch as a piece of furniture for sitting, I leave out the possibility of lying on the couch. If I were to describe the couch structurally, however, you would be able to understand that you could sit or lie on it. The best method would describe the structure of the various components and how they are put together, and then tie that with a description of the functionality.

Remember, describing function can be helpful in getting the patent application reader to think in the right direction, but it does not normally bring the reader to an unambiguous understanding of the invention. When drafting a patent application, it is essential that you remove any ambiguity and specifically describe the components of the invention and how they are configured to achieve the structural invention. Then feel free to explain the functionality, but don't assume the functional description can replace the structural description.

Don't Be Too Specific

Many inventors make the mistake of only generally describing their invention, but being light on specifics is extremely dangerous to the patent-drafting process. Here is an example.

Assume your invention requires a towel. "A towel made of cotton" is not a good description because it is too limiting. It would be better to say "a towel made of a washable fabric, such as cotton, nylon, polyester, cotton/polyester blend, etc.," which is more comprehensive. Notice how the description starts off as generic, i.e., washable fabric, and then makes reference to specific types of fabric. Notice, also, that saying "washable fabric" is limiting with respect to fabrics that are not washable and need to be dry cleaned.

Thus, the key is using generics to start the description, which will capture as much ground as possible, and then to specifically identify as many of the particulars as possible. By pointing out the particulars, you are specifically including those items in the disclosure and, therefore, will have support for them in the

original filing. You are also expanding the scope of the application, and by explaining more, you are explicitly disclosing more, which increases your implicit disclosure.

In the preceding example I used the term "etc.," which is a huge mistake, because it is neither particular nor specific. You would be better off to continue the list and include some type of specific characterization. Try this: "A towel made of a washable fabric, such as cotton, nylon, polyester, cotton/polyester blend, or other breathable fabric or blend." We have now introduced the term "breathable fabric" to our description. The term "breathable fabric" means a fabric that allows moisture vapor to be transmitted through the material.

When using a term of art such as this, you have a couple of choices. First, you can rely on the definition that someone of skill in the art would understand the term to mean. Second, you can define the term more clearly. Patentees are allowed to be their own lexicographers, which means you can define the terms you use. This tends to be the best practice.

Notice, however, that in order to avoid common, everyday, non-specific language, i.e., "etc.," we introduce a term that has a specific meaning. This is what makes drafting a patent so difficult. As you address one issue another pops up. The moral here is to be specific, but not only specific. Consider using general characteristics when appropriate, and if a term of art creeps into your writing, best practice is to define it to remove ambiguity. ☐

**Ambiguity is
one of the worst
enemies of patent
drafting.**

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



Trade Show Secrets

LOOK, LISTEN AND LEARN

BY EDITH G. TOLCHIN

I have participated in and attended inventor trade shows since 1997. In addition to speaking on various topics and consulting with inventors on issues ranging from product safety to manufacturing, I have walked trade show floors to see the newest, strangest, cutest, most complex and innovative ideas conceivable—ideas that exceed the imagination of the average Jane.

Of course, inventors are not average Janes. Inventors take risks. They research. They often put aside a good portion of their nest eggs and take second mortgages on their homes. They make “kindergarten-style” prototypes (practice makes perfect), learn new software and contact reputable industry professionals to help get them started on their vastly unpredictable journey to the top.

They also attend trade shows, which offer multiple opportunities to learn and test the market. This knowledge is provided courtesy of the cost of an exhibitor booth and travel expenses.

Promotion and Pricing

Trade show attendees are quick to offer opinions on the various features of new products, so be sure to take your prototype. I have found CAD drawings or videos alone are not as effective as prototypes; however they can be used productively in conjunction with your prototype.

A sell sheet is a must, as are any other handouts you can create. These should be printed professionally and look as esthetically pleasing as possible. Don't forget to bring packaging samples, so your prospective buyers can envision stocking your product in their stores.



Edie Tolchin will be at the Resource Center at the upcoming INPEX show in Monroeville, Penn., June 7-9, 2016. Visit www.inpex.com for information.

Know what your wholesale and retail pricing will be and do not pre-sell your product if, one, you plan on manufacturing and importing your product from overseas for the first time, or two, you do not have inventory ready to sell. Understand that if you plan on manufacturing your invention overseas, after researching product safety regulations, studying U.S. government regulations, finding a capable and reputable offshore factory, negotiating prices, production testing, quality control and making shipping arrangements, it can take anywhere from four to 12 months to get your new product on the shelves.

Stand Out in the Crowd

Try to make your booth unique. How can you make it stand out among the hundreds of other booths? Flashing holiday lights? Wearing a gorilla suit? What type of gimmick would go naturally with your invention?

You have already taken time away from your day job, so why not take full advantage of the show's entire agenda? Find time to participate in seminars and panel evaluations offered before the show floor opens. Through these you will get additional ideas on almost every aspect of developing, publicizing, marketing and selling your new idea. Take an hour or so to walk the show floor while your co-worker watches your booth, if only to get ideas about how you might better exhibit your invention.

Golden Opportunities

Be sure to network at the evening, after-show functions, where other weary exhibitors will be relaxed, less inhibited and more likely to give you their true opinion of your invention. You might even meet a famous inventor who could offer invaluable advice based on his/her experience of what it took to get to the top. In

**You might even
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invaluable advice.**

fact, I once had dinner at a trade show with the inventor of Post-it Notes.

Also, latch on to any prospective PR opportunities that might come your way. Members of the media and TV production crews often attend, and your invention may be just what interests them. After a recent show, I rode to the airport in the same limo with the producers of *Shark Tank*. Keep those antennae up for golden opportunities.

After the show is over, be sure to thank your hosts. Make an impression by being gracious, even if you only won the third-place award. You never know when they may hear of retailers seeking new products or someone looking to license a product just like yours.

Enjoy the trade show experience. Camaraderie rules, and many beneficial liaisons are forged. It is exhausting, intriguing and eye-opening, to say the least. Look, listen and learn. ☎

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Get more BANG for your BUCK from two professionals with a combined total of over 60 years of experience!



I am a big fan of provisional patent applications and encourage independent inventors, small businesses and universities to start the patent process by filing a provisional application whenever possible. In fact, now that the United States has a first-to-file system, the best practice is to file a provisional patent application as early as feasible and continue to file multiple applications as your invention takes shape. You want and need the earliest priority filing date possible.

In light of this advice, it is important to understand what a provisional patent application is, what benefits are provided and, perhaps, more important, what a provisional patent application is not. First and foremost, there is no such thing as a provisional patent. It is absolutely critical to understand that a provisional application will never mature into an issued patent. Ultimately, to obtain a

Now that the United States has a first-to-file system, the best practice is to file a provisional patent application as early as feasible and continue to file multiple applications as your invention takes shape.

patent, you will need to file a non-provisional utility patent application. Thus, a provisional patent application is best viewed as an economical first step on the path to a patent.

Why File a Provisional Patent?

If a provisional patent application does not mature into an issued patent, why would you file one? Cost for one thing. The fees due to the United States Patent and Trademark Office for a provisional patent application are currently \$130; \$65 for a micro entity. Fees for a non-provisional patent application jump to a minimum of \$730 for a small entity and \$400 for a micro entity.

The second reason is that a provisional patent application allows for filing without a formal patent claim, oath, declaration or information disclosure (prior art) statement. In fact, there are virtually no formalities required to file a provisional patent application, which means that it is almost always possible to file a provisional application and pay less in attorney fees than with a non-provisional patent application.



Provisional patents are most appropriate when you continue to work on your invention. File on what you currently have to establish rights as soon as possible, and then later, if the project continues to make sense, file the comprehensive non-provisional patent application. You can file serial provisional applications for your invention, but once you file a non-provisional patent application, you are locked in. The only way to add information is with another non-provisional filing, which can run the costs up quickly.

Undoubtedly, some attorneys will vociferously disagree and say the only way to move forward is to spend large sums of money to prepare a comprehensive provisional patent application. Is that good legal advice? Yes. Is that good business advice? Not generally, but the truth is it is absolutely possible to prepare and file a thorough provisional patent without breaking your budget.

So, let's talk truth. Is it better to spend more time, and therefore more money, drafting at the provisional patent application stage? Yes. The more time you spend, the more detailed the patent filing will be. A provisional patent application is mostly about protecting your invention at any given moment to the best, most economically reasonable extent possible. You probably don't even know if there is a market for your invention at this point, so spending an appropriate amount of money to file something reasonable makes good business sense.

Cover Sheet Filing

Now let's discuss something you should not do, which is what many in the industry refer to as a cover sheet filing. You can download the USPTO's cover sheet and attach it to anything and file a patent. I've

watched inventors download the cover sheet, pay the fee and file without attaching anything. What do they have? Absolutely nothing. A provisional patent application is only as good as the description of the invention attached.

On the other hand, if you file a single page with a single paragraph describing your idea, you have a pending provisional patent application. Of course, only the patent application is going to be useful, because sufficient details can't be described in a single paragraph. Therefore, I do not recommend attaching a cover sheet to a ran-

pending" status. You now have 12 months to decide whether it makes sense to move forward with the expense of filing a non-provisional patent application. During these 12 months, you can also file subsequent provisional patent applications that either describe the invention more completely, describe new versions of the invention or provide further details you've learned along your invention journey. You can then claim priority to each of the previous provisionals filed within this period prior to the filing of your non-provisional patent application.

A provisional patent application is mostly about protecting your invention at the given moment to the best, most economically reasonable extent possible.

dom set of papers. Such a filing allows you to claim you have a "patent pending," but that patent pending is almost certainly worthless. Although there are no formal requirements with respect to describing your invention in a provisional patent application, in order to be a useful priority document, the invention needs to be completely described in the filing.

Patent Pending

Let's assume you take the necessary steps and file a provisional patent application of appropriate depth and description. The beauty of the provisional patent application is that it locks in your application date and provides you with "patent

Finally, it is critical to understand that a provisional patent application does not protect your invention from copying by others. Remember, there is no such thing as a provisional patent. You will not obtain exclusive rights until a patent issues, which won't happen until after you file a non-provisional patent application that has been reviewed and allowed by a patent examiner. Thus, it is incorrect to think of a provisional patent application as a type of exclusive right. Although you can file a provisional patent application as a low-cost first step toward achieving a patent, the Patent Office will never issue a provisional patent. Period. 🐾



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Protecting Your Patent

THE INEQUITIES OF ADMINISTRATIVE TRIAL PROCEEDINGS

BY GENE QUINN

If you get a patent that won't make anyone, including yourself, any money, the government seems willing to presume that your patent is valid. However, if you get a commercially valuable patent covering an invention that becomes ubiquitous, the government does not presume your patent to be valid. Does this seem sensible? No, but unfortunately, that is reality today.

The United States Patent and Trademark Office states that patents that have returned to the USPTO for review have never been presumed valid, so they shouldn't be considered valid when challenged in an administrative trial. What the USPTO conveniently leaves out, however, is that before the creation of the Patent Trial and Appeal Board, when a patent returned to the USPTO for further consideration, an examination, not a litigious challenge, occurred. The post-grant procedures are substitutes for litigation in federal court, yet the patent office applies examination standards

while nearly universally refusing to allow patent owners the ability to amend their patents.

In short, when it created the administrative trial proceedings, the USPTO created an unfortunate mixture of examination and litigation, taking the elements of examination that are least favorable to the applicant and elements of litigation that are least favorable to the patent owner. What resulted was not only an extraordinarily speedy trial with limited procedural rights commonly associated with trials in federal court, but also the burdens and standards associated with a patent examination procedure with none of the rights.

Right to File a Motion

The inability to amend claims isn't fair to patent owners and doesn't comply with the statute. For example, 35 U.S.C. 316(d) specifically gives the patent owner the right to "file 1 motion

to amend the patent...,” yet, ignoring the straightforward language of the statute has become a recurring theme at the PTAB. In this case, the PTAB will tell you it is not ignoring the statute: It does give patent owners the right to file a single motion to amend, but it then nearly always denies the motion. This misinterpretation of the statute and open disregard for the clear terms of the legislative history has alarmed many within the industry.

Sadly, rather than operate as a check on this unfettered executive power, the United States Court of Appeals for the Federal Circuit has largely been a rubber stamp for the interpretations from the PTAB. The Supreme Court will soon step into this fray in *Cuozzo Speed Technologies v. Lee*. This case will be decided before the end of June, but given the Federal Circuit’s abdication of oversight, likely means there will be many more opportunities for the Supreme Court to weigh in on PTAB practices and procedures in coming years.

Speed at All Costs

Why has the USPTO adopted rules of procedure that are slanted so noticeably toward the challenger and against the property owner, who is supposed to own a patent that is presumed valid? Why have PTAB interpretations of the rules and PTAB decisions led to such obvious procedural unfairness?

The answers are obvious, though less than satisfying. The USPTO has only 12 months to complete these reviews, so corners have been cut in order for the administrative proceedings to be conducted in expedited fashion. Of course, expedited fashion is not always associated with the conventional notions of justice and fair play. This is perhaps best exemplified by the PTAB ruling that a patent owner has a right to file motions, but any and all motions can be denied, even if authorized by rule.

The one rule that doesn’t seem to fit with the speed-at-all-costs *modus operandi* by the USPTO is the failure to presume issued patents are valid, as required by 35 U.S.C. 282. Given the necessity of conducting these proceedings so quickly, you might think the USPTO would have erred on the side of supporting the decision previously reached, which would make

sense and comply with the statute. You would be wrong.

Those who support the USPTO rules and PTAB interpretations will tell you that the standards applied are not outcome determinative. Whether patents are presumed valid is also irrelevant, as is whether the PTAB applies the district court standard for claim construction or the broadest reasonable interpretation standard applied during examination. It is conceivable that newly discovered prior art could create a problem for a particular patent claim so that the standard applied would not matter, but to say or suggest that it would never matter seems extraordinarily unlikely and not entirely accurate.

**As it stands,
many feel the Office
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none of the previous
work is assumed to
be correct.**

What’s the Point?

Of course, if the standard applied is not outcome determinative, what is the harm in presuming patents are valid, as the statute demands? Not only would this presumption comply with the statute, but if the USPTO presumed the patent examiner were also correct and placed the burden on the challenger, the Patent Office would spare itself the backlash of patent owners. As it stands, many feel the Office is engaging in a game of bait-and-switch that grants applicants a patent after a long, arduous and costly patent prosecution, only to have patents that are commercially viable challenged in post-grant proceedings in which none of the previous work is assumed to be correct.

What is the point of this cumbersome patent examination in the first place if the PTAB refuses to apply the presumption of validity? The patent examination process easily takes four to five years under the best of circumstances,

but in many areas of technology the examination process routinely lasts more than a decade. What good is an examination process that ends with a patent being assumed invalid by the agency that granted the patent in the first place? If the USPTO does not presume that the work product of patent examiners is solid, why should anyone else?

Without substantial reforms to either the patent examination process or to post-grant administrative proceedings, the USPTO will create lasting damage to the U.S. patent system. We can only hope that damage won’t be irreparable. ☹



Equal Opportunity

USPTO LIKES THE
COLOR OF EVERYONE'S MONEY

BY GENE QUINN

In a comment on a recent article I posted on ipwatchdog.com, an anonymous individual claiming 10 years of patent prosecution experience lamented the transformation of the U.S. patent system into a Byzantine one that appears to have the goal of denying the benefits of owning a patent. “It now looks like a bait-and-switch system,” the commenter, known as Ternary, wrote. “You will get a patent, which will be taken away in post-issuance procedures, preferably at the moment when you want to obtain its legal benefits as a rightful owner.”

I often hear that same sentiment from inventors, small businesses, patent attorneys and even large corporations that find themselves caught in the snare of the Patent Trial and Appeal Board. Many may be tempted to write off this sentiment as nothing more than emotional ranting, but that would be a mistake. The sentiment runs deep and is shared by some in the industry who are intimately familiar with the looming United States Patent and Trademark Office budget crisis. While frustration can explain some of the underlying anxiety, there is also a factual basis for these feelings.

Maintenance Fees

A substantial portion of the fees collected by the Patent Office comes from maintenance payments. For example, in FY 2011, the USPTO collected approximately \$819 million in maintenance fees and around \$1,035 million in fees related to work performed. Dennis Crouch, an associate professor of law at the University of Missouri School of Law, has called maintenance fees “easy money for the USPTO because the Office has already done the work of examination.”

With that amount of revenue at stake, the Patent Office has a conflict of interest, if not an outright ethical dilemma. The Office bemoans low-quality patents, but if it does not issue patents, it cannot collect issue fees nor charge maintenance fees. To put this in perspective, current issue fees for a large entity are \$960 per patent, while maintenance fees for a large



entity range from \$1,600 for the first payment to \$3,600 for the second and cap at \$7,400. These charges are in addition to application fees, extension fees and the almost certain continued examination fees.

Budgetary Crisis

The Patent Office finds itself caught between the proverbial rock and a hard place. With so much of the Office's funding stemming from maintenance fees, the agency's budget depends upon patent owners applying for, receiving and then paying to keep the patents they own. In recent years, however, thanks in large part to the dismal record for patent owners in *inter partes* review proceedings and an increasingly antagonistic Supreme Court, less is being maintained because the stakeholder community views patents as harder to enforce and, therefore, not as valuable. The USPTO budget is far from secure.

In addition to the budgetary uncertainty created by a decrease in applications and maintenance fees, during the August 20, 2015 Patent Public Advisory Committee meeting, USPTO Director Michelle Lee announced a shared services initiative. Under this initiative, agencies falling under the Department of Commerce will utilize shared services for human resources, information technology and procurement. The fear is that since the USPTO is funded by user fees, it will be required to pay for the IT and other needs of the various Commerce agencies with funds that are supposed to be designated for the operation of the USPTO. At a time of decreased revenue, a shared services initiative threatens to further deplete USPTO coffers and become the new face of fee diversion.

USPTO Doesn't Play Favorites

Not only does the Patent Office handsomely charge for the acquisition and maintenance of a patent, it also charges for the right to challenge those patents after issue. For example, if you want to challenge inexpensively, you can use *ex parte* reexamination, which costs a large entity \$12,000 to file. If you want to challenge more than three independent claims or a total of 20 claims, you must pay additional fees.

If a large entity wants to avail itself of new administrative trials created by the America Invents Act, it can request institution

of an *inter partes* review for up to 20 claims for \$9,000, but there is a post-institution fee of \$14,000 for up to 15 claims. In both situations, there are the inevitable extra claim fees, but it gets really expensive if you want to file a covered business method challenge. The CBM petition fee for a large entity is \$12,000 for up to 20 claims, and the post-institution fee is \$18,000 for up to 15 claims instituted. Extra claim fees apply to both situations.

Is the Patent Office intentionally manipulating the system so it can charge extra fees? Absolutely not, but many people are openly discussing about how much the USPTO charges patent applicants, patentees, and subsequently, challengers. When you add the uncertainty of the USPTO budget and the fact that the Patent Trial and Appeal board reports to the Director of the USPTO, thereby not experiencing true judicial autonomy, it is difficult to come up with a more conflicted structure or system.

The Office bemoans low-quality patents, but if it does not issue patents, it cannot collect issue fees nor charge maintenance fees.

Conclusion

As a result of the USPTO's policies, many in the stakeholder community have lost faith in the patent system, and there is a growing sentiment that the rug will be pulled out from under inventors in the end. Perhaps this is why, for the better part of a century, the Patent Office steadfastly refused to publicly comment on even the possibility that a patent could be invalid.^[1]

For the patent system to work, the Patent Office must be perceived to be completely neutral. If you deserve a patent, you get a patent. In addition, the entity handing out the patents cannot be viewed as anti-patent or in favor of getting rid of patents, even low-quality ones. A Patent Office that is constantly discussing how many low-quality patents it has issued does nothing to inspire confidence in the next generation of innovators and does long-term damage to the system. ☐

^[1]See *Staying Litigation Pending Reexamination of Patents* at pg 283, citing *United States v. General Electric Co.*, 183 U.S.P.Q. 551, 552 (Comm'r Pat. 1974) in which the Commissioner of Patents and Trademarks reaffirmed the Office policy of refraining from commenting on possible invalidity of a patent.

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