Inventors DIGEST

AUGUST 2015 Volume 31 Issue 08

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Daydream Believers

Until taking over the role of editor at *Inventors Digest*, I had no idea how many people were devising solutions to common problems or were struck by a spark of imagination that led to a brilliant innovation. Dreams and daydreams, it seems, are part of that process.

Josh Springer, inventor of the Bottoms Up Beer Distribution System, says the idea for filling a glass from the bottom, rather than the top, came to him in a daydream while he was watching beer being poured at a restaurant. *Inventor Digest* columnist Jack Lander, this month, reminds us that Nikola Tesla claimed all of his inventions came to him in dreams, and that Dimitri Mendeleev saw the periodic table of elements in a dream.

Lander says that after analyzing problems, he often lets his subconscious wander, describing a particular experience in which the solution to a bicycle transmission problem appeared on the windshield of his car as he was driving through the New England countryside. I have to wonder if Stephen Hawking had similar experiences when he advanced his theory of quantum mechanics, or Steve Wozniak when he originated the idea for the Apple II computer.

The most convoluted dream I ever had included a personal transportation device that was a cross between a helicopter, a roller coaster and a Model T. Although the dream occurred years ago, I can describe the contraption in detail, right down to the way it bounced around on the sidewalk. When I awoke, I couldn't decide if I needed an industrial designer or a psychiatrist.

Although I can recall that dream in vivid detail, Lander says inventors should carry a notebook at all times, because ideas—and dreams—often go as quickly as they come.

At the other end of the spectrum, Steve Young took an analytical approach to his invention, SYNEK, a system that chills, pressurizes and preserves beer. Intrigued by the number of microbreweries springing up around the country, Young traveled coast-to-coast talking to small brewery owners in hopes of discovering an unfilled niche. He left nothing to chance as he researched the beverage-delivery technology that led to SYNEK.

There is never a lack of intellect or imagination; the problems people encounter with inventions are in product development and distribution. Take the subject of this month's cover story, Bill Nordt, M.D., who took his first two orthopedic devices to market on his own. After years of investments of time and financial resources, the devoted physician found it too challenging to maintain his medical practice while simultaneously tackling product development and marketing. Nordt didn't think twice about looking for a distribution partner for his third invention, the DonJoy Reaction WEBB Knee Brace, with which he has experienced great success.

Josh Bryan, originator of the action figure HeroMe, on the other hand, does most of his marketing through the Internet. His wife, Annie, runs a social media campaign to promote the name and build the brand.

Regardless of how you get an idea out of your head and into your hands, the goal is to profit from your invention. There are hundreds of thousands of pending patent applications known only by employees at the United States Patent and Trademark Office.

By the way, if you're thinking about running away with my idea for a personal transportation device that rolls down the sidewalk propelled by helicopter blades, clipping everything in its path, reconsider. According to IP Watchdog Gene Quinn, ideas are not patent eligible. With an invention, the devil is in the details.

— Cama McNamara

DREAM SMALL

DISCOVER NOTHING

IMAGINE LESS

DO WHAT'S BEEN DONE

INSPIRE NO ONE

GIVE UP

HOLD BACK

INVENT NO MORE

IGNORE YOUR HEART

SHOOT FOR AVERAGE

THINK NEGATIVE

REACH FOR THE GROUND

IF CONGRESS PASSES LEGISLATION WEAKENING PATENT PROTECTION, THE MESSAGE TO INVENTORS IS, "WHY BOTHER?" SO WHAT INVENTIONS WON'T BE INVENTED? WHICH START-UPS WILL GET KILLED BY FOREIGN COPIERS BEFORE THEY GET STARTED? WHOSE JOBS WILL GET SHIPPED OVERSEAS? VISIT SAVETHEINVENTOR.COM AND TAKE ACTION TO HELP PRESERVE U.S. INNOVATION AND ECONOMIC GROWTH.

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Bill Nordt, M.D., photographed by Ian O'Roarty

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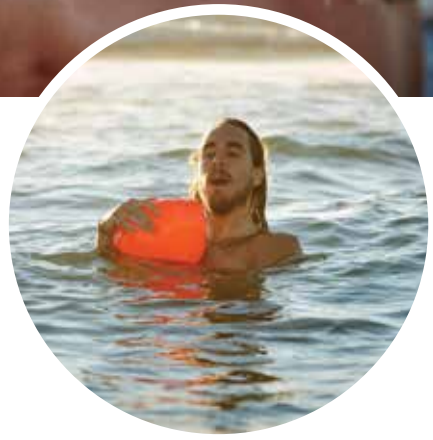


Kingii

WRIST-WORN DEVICE KEEPS YOU AFLOAT

www.kingii.us

If you think life vests are bulky and restrictive, you may enjoy the water more in the Kingii—the smallest inflatable water-security device in the world. The durable, nylon floatation apparatus is conveniently stored inside a small pouch next to a CO2 cartridge, both of which are attached to a wristband. When the lever on top of the wristband is pulled, the CO2 cylinder fills the floatation device in one second, providing support for the swimmer. The inflatable bag is bright orange for visibility and small enough to cling to while awaiting rescue. An attached whistle can be blown to draw attention if the swimmer is in serious trouble. Can't see the shore? A built-in compass guides swimmers in the right direction.

Once the Kingii Cylinder, containing the CO2, is removed, the Kingii deflates for ease of packing back into the pouch. Replace the CO2 cartridge, and the flotation device is ready to be used again. Kingii is currently available for pre-order on IndieGogo, with packages starting at $79. It will be released September 2015.

— Cliff McNamara

"Throughout the centuries there were men who took first steps down new roads armed with nothing but their own vision. Their goals differed, but they all had this in common: that the step was first, the road new, the vision unborrowed, and the response they received—hatred. The great creators—the thinkers, the artists, the scientists, the inventors—stood alone against the men of their time. Every great new thought was opposed. Every great new invention was denounced. The first motor was considered foolish. The airplane was considered impossible. The power loom was considered vicious. Anesthesia was considered sinful. But the men of unborrowed vision went ahead. They fought, they suffered and they paid. But they won."

AYN RAND, *THE FOUNTAINHEAD*

Sony Light Bulb Speaker

LIGHT—AND MUSIC—SIMULTANEOUSLY

www.sony.com

It's not available in the United States right now, but you're going to want one. The LED Light Bulb Speaker from Sony combines a Bluetooth speaker with an LED light bulb for music anywhere. Just screw the Light Bulb Speaker into a light fixture for instant sound. A smartphone app or dedicated remote control gives full regulation over the volume of music and brightness of the 360-lumen bulb. The device opens possibilities for audio in the home, since it can used any place that has a light fixture. Listen to music in your bedroom, bathroom or laundry room. The product retails for about $200 in Japan. — *Cliff McNamara*

AirMouse

EVOLUTION OF THE COMPUTER MOUSE

www.theairmouse.com

The familiar computer mouse has gotten a little sleeker over the years, but ultimately, the traditional mouse hasn't changed that much since its rollout in the '80s. Enter AirMouse, the next evolution in computer cursor technology: a lightweight, wireless, motion-sensitive, wearable mouse that fits on the hand. AirMouse allows users to keep their hand in a natural, neutral position during computer use, increasing comfort and reducing the risk of repetitive strain injuries—all while offering its wearer a futuristic, sci-fi look. And because it's wireless and can go up to a week between charges, users won't be tethered to a cord. AirMouse comes at a sticker price of $129.00 and should hit the market no later than mid-2016. *—Zach Rachuba*

ShelfPack

HAVE CLOSET, WILL TRAVEL

www.shelfpack.com

Packing and organizing clothes for a trip was a hassle until the invention of ShelfPack—a modified suitcase with a built-in, collapsible shelf mechanism in the main compartment. Travelers can pack clothing on the shelves before departing and easily assemble the shelves upon arrival at their destination. Setup is quick and simple, and the shelves let users choose outfits without having to dig through all of their clothes. No more unpacking for a short stay or digging through a messy suitcase. ShelfPack is approximately the size of a standard adult suitcase, but offers the conveniences of a portable, ready-to-go closet. ShelfPack costs $350; shipments begin this month. *—Zach Rachuba*

Vortex

SMART, ENGAGING ROBOT

www.dfrobot.com

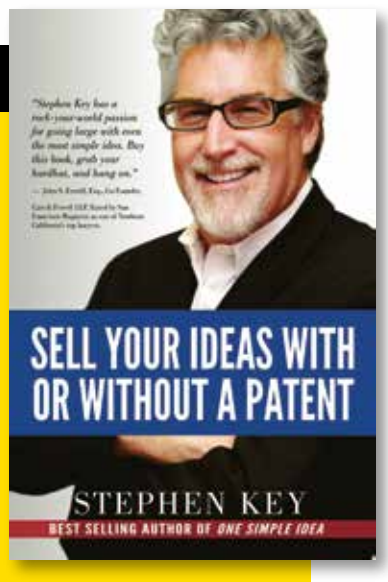
The latest product from DFRobot, Vortex, is a smart, responsive and friendly little bot that plays games and can be programmed by children as young as six. The robot connects to iOS or Android devices, and comes with a number of preloaded games, including Bumping Fight (a game in which multiple Vortexes try to push each other out of a ring), Virtual Golf (which allows you to change clubs and record your shots as if you were on a golf course), Driving (which includes four uniquely tuned Vortex racers and more than 50 props to design a course) and Robot Soccer.

The open-sourced robot can be programmed with an iPad or PC, using Arduino or Scratch. Users can take courses that teach how to use Vortex's built-in features, which include a piece of moving music, a puppet show, a tank, a vacuum cleaner and a moving camera. Kids can personalize how the robot behaves with the intuitive app, which teaches the basics of programming in a graphical, drag-and-drop manner. Vortex is available for preorder on DFRobot's Kickstarter page for $69 and will be released in October. — *Cliff McNamara*

INVENTOR READS

Sell Your Ideas With or Without a Patent

By Stephen Key and Janice Kimball Key
(Stephen Key Media, LLC, March 2015)



If you thought a patent on your idea was necessary to market it, think again. Serial author and inventor Stephen Key explains how to profit from your invention by using the tools of the United States Patent and Trademark Office to establish what he refers to as "perceived ownership." These tools include copyrights, trademarks, provisional patent applications and patents, and Key explains how to take advantage of each one.

A successful entrepreneur and intellectual property expert, Key says there are many gray areas in getting a product to market, and all are negotiable. He relies on personal experiences, as well as those of his clients, to recount numerous situations. Over 25 years, Key encountered copyrights, trademarks and patents, including a court battle with LEGO, which he won. Having licensed 20 products, Key understands how to negotiate fees for licensing agreements—with or without a patent.

Key begins with "open innovation," the concept that large companies should use internal as well as external ideas to move forward. Large companies want your ideas, says Key, and they are willing to pay for them to get a competitive edge. Key describes in detail how to create perceived ownership and how to profit from an innovation without spending a lot of time and money.

Key emphasizes that he is not an attorney, yet he approaches the subject matter as an experienced player. Ultimately, the goal of *Sell Your Ideas With or Without a Patent* is to educate inventors on the most reliable and efficient means to make money from an idea. Key manages to do this from a business perspective, giving novice and mid-level inventors a greater awareness of their options.

— *Cama McNamara*

SPLENDOR ON THE GRASS

Don Featherstone Turned Pink Plastic Into an Instant Classic

Shabby or chic, cultural icon or eyesore, plastic pink flamingos have been a mainstay of Americana since they were introduced nearly 60 years ago. It's hard to imagine how dull the American landscape would have been without these brilliant pink creatures flaunted on front lawns—their long, slender necks stretched in familiar curves; bodies perched on metal rods that in no way resembled legs. The playful birds have a certain mystique that transports us from the mundane confines of suburbia into a tropical fantasyland, where gentle breezes, aqua seas and umbrella-topped cocktails reign.

While Mother Nature may take credit for *Phoenicopterus ruber*—the living, breathing birds—Don Featherstone, who died June 22, 2015, was the creator of *Phoenicopterus ruber plasticus*, as he dubbed his polyethylene version.

Bird Watching

A 1957 graduate of the school of the Worcester Art Museum, Featherstone's professors were slightly embarrassed when the talented artist took a position with Union Products, a maker of plastic lawn ornaments in Leominster, Mass. His first assignment was designing a duck. Featherstone bought one he named Charlie from a nearby farm, and during the six weeks of his study, went so far as to bathe the duck in a sink and place mirrors in the studio so Charlie would think he had friends.

By the 1980s, the pink flamingo was considered art. In 1987, the governor of Massachusetts proclaimed the plastic bird "an essential contribution to American folk art."

Coming up with a model for his next assignment—a flamingo—wasn't as easy. Featherstone managed to unearth a *National Geographic* photo spread called "Ballerinas in Pink," and after intense study, produced a three-foot pair of birds. According to *Smithsonian* magazine, "it took two weeks to model both sides of the bird, brought into the third dimension by then-revolutionary injection-mold technology." Featherstone was hardly prepared for the splash the flamingos made when they hit the market two years later.

The birds quickly became popular—not simply for their kitsch—but because during the housing boom that followed World War II, the hundreds of subdivisions that sprang up across America often looked identical. "A woman could pick up a flamingo at the store and come home with a piece of tropical elegance under her arm to change her humdrum house," Featherstone said in a 2012 *Smithsonian* interview. An indication of the novelty of the bird that first year can be found in the Sears catalog, which offered a pair for $2.76 with instructions that read: "Place in garden, lawn, to beautify landscape."

Years later, Featherstone's creation was such an integral part of American life that when his wife, Nancy, told people her husband had invented the plastic birds, they often uttered an incredulous, "Someone did that?"—as if the polyethylene birds were simply the next step in an evolutionary process.

Fall From Grace

During the 1960s, home and garden magazines, fed up with all things plastic, urged readers to replace pink flamingos and their jaunty companions—gnomes—with natural elements. As a result, Sears dropped the birds in 1970, but fortunately, by the late 1970s, the enlightened leftovers of the hippie generation decided that pink flamingos were as cool as they were outrageous, and a resurgence of the colorful lawn art began.

Don Featherstone, who died June 22, 2015, was the creator of *Phoenicopterus ruber plasticus*, as he dubbed his polyethylene flamingos.

In 1979, students at the University of Wisconsin-Madison planted 1,008 of the two-legged creatures in the grass in front of the dean's office. The prank resulted in a five-minute debate by the Common Council of Madison, which voted 15 to 4 to designate the pink plastic flamingo the city's official bird. Elsewhere, the birds were banned by some homeowners' associations, which claimed they led to a decline in property values.

Pretty in Pink

By the 1980s, however, the pink flamingo was considered art. In 1987, the governor of Massachusetts proclaimed the plastic bird "an essential contribution to American folk art," leading to the foundation of clubs such as the Flamingo Fanciers of America and the International Society for the Preservation of Pink Lawn Flamingos to honor the bird's 30th birthday.

In 1969, Featherstone was awarded an Ig Nobel Prize, an annual satirical award honoring *outré* contributions. That same year, he was named president of Union Products, serving until his retirement in 2000. Along the way, he coauthored the 1999 photographic book *The Original Pink Flamingos: Splendor on the Grass* with Tom Herzing,

Union Products ceased operations in 2006, prompting fear that *Phoenicopterus ruber plasticus* may become extinct. A few years later, the Cado Company of Fitchburg, Mass., acquired the rights to the Union Products line and, once again, Featherstone's creations rolled off the production line. Whether you consider them national treasures or gaudy trash, the flamboyant fowls should be around for another 60 years, gracing lawns from coast to coast with their very own brand of pink Americana.

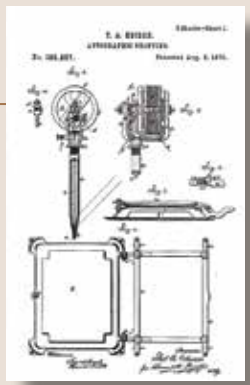
— Cama McNamara

INVENTOR ARCHIVES: August

August 2, 1904

U.S. Patent No. 766,768 was granted to Michael Owen for a glass-shaping machine, which led to the immense production of glass bottles and jars we have today. With the machine, glass bottles could be produced at a rate of 240 per minute, reducing labor costs by 80 percent.

August 8, 1876



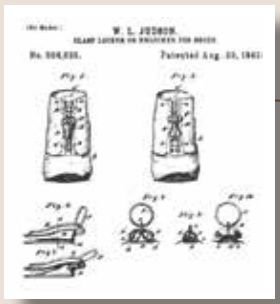
Thomas Edison was granted U.S. Patent No. 180,857 for autographic printing, which covered the electric pen. This marked the beginning of office copying technology and the subsequent invention of the mimeograph, the first widely used duplicating machine, licensed by Albert Blake Dick in 1887. In the late 1960s, mimeographs were gradually displaced by photocopying and offset printing.

August 9, 1898

U.S. Patent No. 1,773,079 was granted to Clarence Birdseye, the pioneer of the modern frozen food industry, for a method for packaging frozen foods. The General Foods "Birds Eye" name remains a leading frozen-food brand.

August 21, 1888

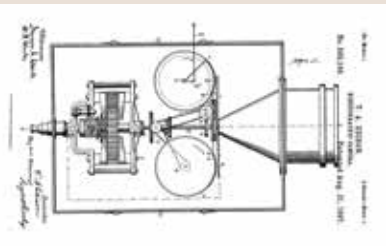
U.S. Patent No. 388,116 was granted to William Seward Burroughs for the first practical calculating machine.



August 29, 1893

Whitcomb Judson was granted U.S. Patent No. 504,038 for a clasp locker, a system of hooks and eyes run by a "guide" for opening and closing an item of clothing. The name "zipper" was used years later, when the B. F. Goodrich Company used Gideon's fastener on a new type of galoshes.

August 31, 1897



U.S. Patent No. 589,168 was granted to Thomas Edison for the kinetographic camera, which later became the motion picture camera.

POWER PLAY

HeroMe to the Rescue

BY CAMA MCNAMARA

What child isn't mesmerized by superheroes? Considering the crowds flocking to the recent blockbuster hits *Spider-Man*, *X-Men* and *The Avengers*, it seems that children of all ages are fascinated by these heroes' otherworldly powers. But what if a child could create his own superhero—envisioning, perhaps, how he sees himself or the man he might become? What would the superhero be called? What would he look like? What superpowers would he possess? That's the idea behind a brand of action figures that morph into reality through a child's imagination—and the magic of HeroMe.

Josh Bryan, the super mind behind HeroMe, came up with the idea when, as a participant in Big Brothers Big Sisters in Charlotte, N.C., he tutored a student who was having trouble in math. To encourage him, Bryan made a math-themed superhero, and the boy began to excel at the subject. When Bryan realized how much the superhero motivated the child, he began exploring ways for children to be able to create their own action figure, one that would encourage positive behavior and a "do good" mindset while building confidence.

PHOTOS BY LAURA ROWE PHOTOGRAPHY

Action Figures Take Shape

After graduating from the Kenan-Flagler Business School at UNC-Chapel Hill in 2012, Bryan pursued his project in earnest, initially creating prototypes similar to paper dolls. Although Bryan had a master's degree in business, he was a novice at product development, which is when product design firm Enventys, also in Charlotte, entered the picture. A team of industrial designers created the arms and legs, perfected the action figure's size and proportions, and sketched the concept. Sculptures from which the manufacturer eventually worked were then created. Last came the logo and packaging—a reusable rocket-shaped box.

Bryan spent a year searching for a manufacturer before connecting with the sourcing company Bamko, which was able to find a facility in China that had the capabilities necessary to produce the toy. Some of the figures' parts required hand painting; others needed to be spray painted or hand stamped—and there could be no sharp points, says Bryan.

Before production began on HeroMe, Bryan flew to the plant in China, where he spent three 12-hour days working with an English-speaking representative—employed by Bamko—to iron out the details with the Chinese engineers. The resulting prototypes were shipped back and forth between the United States and China after Bryan's return. "It was important to be involved in the manufacturing process," Bryan says.

In 2014, with a goal of $25,000, Bryan raised $34,000 through a Kickstarter campaign to get the action figures manufactured. The rest of the start-up costs were self-financed and included a monetary award Bryan received from Kenan-Flagler to pursue his idea after graduation.

Josh and Annie Bryan developed HeroMe to encourage positive behavior in young children.

The action figures come with a *HeroMe Handbook* that incorporates learning games into the development of a personal HeroMe story.

Built to Last

It was not economically feasible to have the action figures assembled overseas, so the job was left to Bryan and his wife, Annie. When the first shipment of parts arrived in November 2014, the Bryans put together nearly 300 action figures, based on the orders they had received through the Kickstarter campaign. Building a superhero is more complicated than it sounds. The 12-inch tall plastic figures are available in 125 different combinations: five heads, five arms and five legs to coordinate.

Children can visit the HeroMeLab website and create a customized action figure based on the qualities they admire. There is choice of head in two skin colors, plus a customizable right arm and left leg. (The other leg and arm are shaped like human body parts.) The arms and legs come in various shapes—including a tank leg and a lightning arm—that define the figure's superpowers. The most popular, says Bryan, are the helicopter arm and the cheetah and tank legs. Each figure has a power rating for strength, speed, defense and agility, depending on the appendages chosen.

"We wanted to create something that was open-ended," says Bryan about the process that encourages children to think creatively. The action figures come with a *HeroMe Handbook* that incorporates learning games into the development of a personal HeroMe story. A custom ID card and the rocket ship-shaped box are also included.

Bryan says that launching a business in a highly saturated toy market has been challenging. "Big toy companies are well-funded," he says, "and it's hard to match their marketing dollars." Most of the company's sales are online, although the couple recently attended the American Specialty Toy Retailing Show in Charlotte, where

"THE MOST POPULAR, ARE THE HELICOPTER ARM AND THE CHEETAH AND TANK LEGS. EACH FIGURE HAS A POWER RATING FOR STRENGTH, SPEED, DEFENSE AND AGILITY, DEPENDING ON THE APPENDAGES CHOSEN." — JOSH BRYAN

they landed a "handful" of accounts. Annie, an attorney by profession, has been spreading the word through a social media marketing campaign.

Girl Power

Now that HeroMe is up and running, the Bryans have turned their attention to launching a female action figure, something they had originally intended. They were prohibited by cost—and a suitable female torso. The couple didn't want the female version of HeroMe to be provocative in any manner; they simply wanted a superhero with a subtle female shape. "Designers came back with dimensions even more absurd than a Barbie doll," says Annie. "The first drawings didn't make us feel like we would be empowering any child, male or female."

Preliminary designs of the female HeroMe indicate the Bryans achieved the concept they had in mind—the kind of figure that empowers and inspires children, regardless of gender. The action figures have feminine shapes, but the bodies are muscular for performing superhero tasks. HeroMe girls are also more diverse than their male counterparts, offering an array of skin tones, hair colors and styles, and facial features, but everything else about the figures—uniforms, arms and legs—remains the same.

Adding a female figure will make the product more relatable to girls, but the Bryans don't plan on marketing the new superhero specifically to girls. These superheroes—"strong, confident and happy"—just happen to be girls. With girls already purchasing HeroMes, the Bryans hope boys will buy a male HeroMe, as well as a female HeroMe. "We're trying to make them all part of the same team," says Bryan.

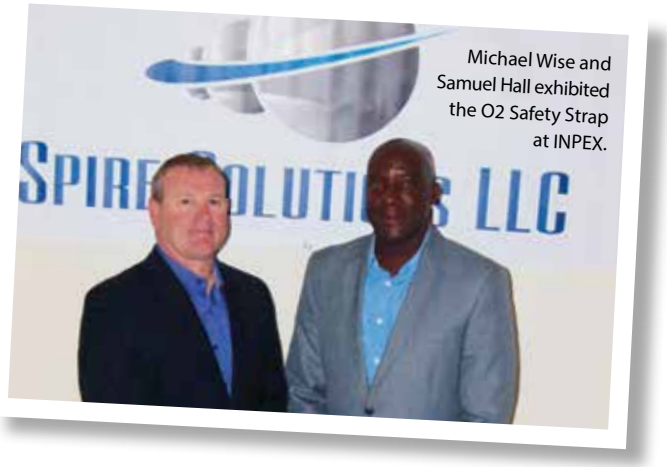
Developing HeroMe girl is an expensive proposition. The Bryans estimate the cost, including design, manufacturing, painting, testing and shipping, to be approximately $150,000. A recent Kickstarter campaign failed, but with the private funding the Bryans were able to secure, the superheroes should be ready for action by the summer of 2016. When that first shipment rolls off the line, the company's mission to inspire "kids to think creatively while teaching them that they have the power to do good anytime, anywhere" will be accomplished.

A Breath of Fresh Air

Samuel Hall Makes Portable Oxygen Tank Use Safer BY EDITH G. TOLCHIN

INPEX, America's largest invention and new product trade show, held its 30th annual exposition in Pittsburgh, Penn., this past June. I have participated in the event for the past 15 years and always leave in awe of the imaginations and minds of the inventors who attend. This year, I was impressed with Samuel Hall, inventor of the O2 Safety Strap.

In 2003, Hall was diagnosed with sarcoidosis, a rare auto-immune disease, and bronchiectasis, an abnormal widening of the bronchi, which necessitated the use of supplementary oxygen and the accompanying tanks, as he awaits a lung transplant. Hall experienced problems common to those who require oxygen—the cannula line caught on doors and other objects, and he often tripped over it. After tearing his patellar tendon, Hall decided it was time to remedy his problem.



Michael Wise and Samuel Hall exhibited the O2 Safety Strap at INPEX.

EGT: How does the O2 Safety Strap work?
SH: The O2 Safety Strap is a very simple yet effective medical device. The strap is designed especially for supplementary oxygen users. Traditional cannula lines hang from the nose and straight down in front of the wearer. The O2 Safety Strap basically reroutes one cannula from its original position to the back of the wearer for safer carrying or transporting of the oxygen tank.

EGT: How did you create the prototype?
SH: My very first prototype was created from the arm straps I took off of a backpack.

EGT: Who are the consumers you had in mind for this product?
SH: The O2 Safety Strap is uniquely versatile. It allows a supplementary oxygen user to transition from portable oxygen concentrators and oxygen cylinder bags to stationary home concentrators by means of a cannula. Ideal buyers would be oxygen concentrator companies, medical facilities, pharmacies, retail stores and home medical equipment stores.

EGT: What is your plan for development, manufacturing and sales of this product?
SH: I formed a company in 2012, Spire Solutions, LLC, with Michael Wise, who is CEO and the company's primary financial backer. With good strategic planning, we hope to raise enough revenue through crowdfunding to soon have the O2 Safety Straps manufactured and ready to market.

EGT: What are your product's advantages over similar products used for oxygen portability?
SH: There is nothing else that helps provide improved safety for mobile supplementary oxygen users on today's market.

EGT: Did exhibiting at INPEX help you advance the development of your product?
SH: Spire Solutions, LLC received a Gold Medal Award of Merit at INPEX 2015, and it has permitted us to network and meet some wonderful people. INPEX was educational for us, as well.

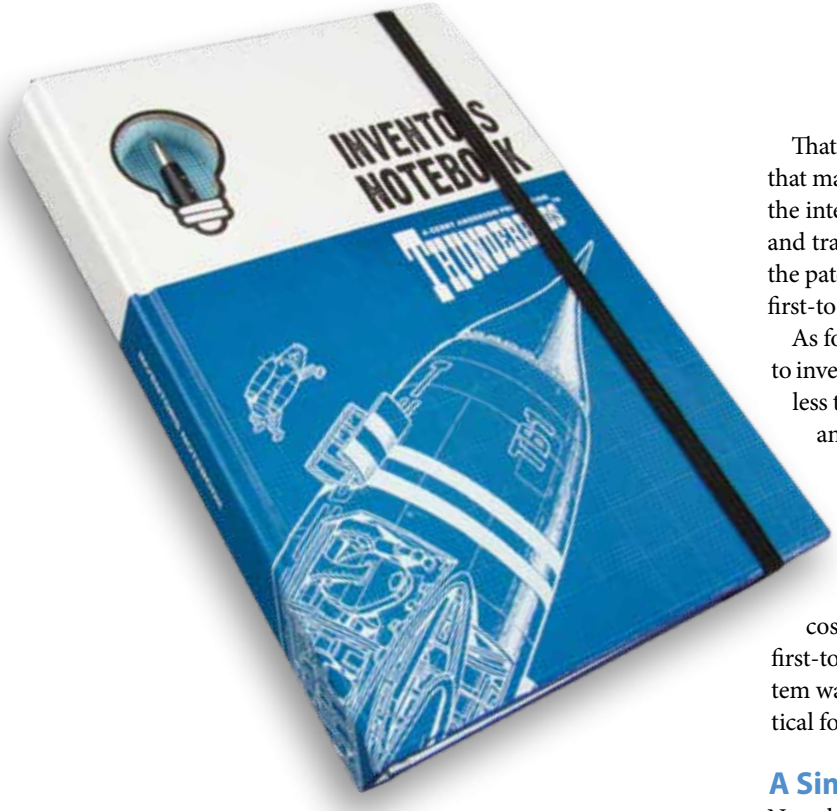
EGT: I understand that the O2 Safety Strap was endorsed by the Chronic Obstructive Pulmonary Disease Foundation.
SH: In 2012, I submitted the O2 Safety Strap to the Edison Nation Medical inventors' site. Edison Nation Medical is an open innovation marketplace to help inventors and small businesses. The company thought that the strap had great potential. Spire Solutions, LLC entered into an agreement with Edison Nation with the hopes of the strap taking off. It took some time, but Edison Nation did acquire an endorsement for the strap by the COPD Foundation. With the COPD Foundation's endorsement, we decided to withdraw from the original licensing agreement (to pursue developing the product on their own.)

EGT: What are your long-term goals for this product? Where do you see your company within five years?
SH: Statistically there are more than two million people in the United States that are on supplementary oxygen. Twelve million, like me, suffer from COPD; 132 million people globally have COPD. Spire Solutions, LLC's goal is to reach and help as many people as we can to live a full and productive life by making supplementary oxygen users feel safer and as mobile as possible. Within five years, Spire Solutions, LLC would like to be recognized for revolutionizing the way all supplementary oxygen is carried. We are hoping for a licensing deal, a buyout, or to connect with a major company with our patent-pending O2 Safety Strap.

Author **Edie Tolchin** focuses her work on the process of inventing. She is also the owner of EGT Global Trading, through which, for over 25 years, she has helped hundreds of inventors bring their products to market. Contact Edie at egt@edietolchin.com.

EDITOR'S NOTE: INTERVIEW HAS BEEN EDITED FOR CLARITY.

The Inventor's



Before the America Invents Act was passed by Congress in 2011, it was essential for inventors to keep a detailed and witnessed notebook. We were encouraged to use a lab-type book with numbered, sewn-in pages. The point was to have a diligent and timely record of the development of our inventions in case we had to prove that we were the "first to invent."

That was the law until "first to file" went into effect on March 16, 2013, changing everything. Today, even if you can demonstrate to an arbiter or judge that you were the first to invent, if another inventor files a patent application on the innovation before you file, that person is the inventor recognized by the U. S. Patent and Trademark Office.

That seems unfair, doesn't it? Innovation is one of the things that made America great. The main reason for the change was in the interest of global harmony in relation to patent enforcement and trade. The United States abandoned first-to-invent, because the patent systems of every other country in the world were on a first-to-file basis.

As for fairness, the first-to-invent system was not the godsend to inventors it may have seemed. According to Gigaom Research, less than one percent of patent filings in 2007 were challenged, and only seven cases were awarded to the challenger based on first-to-invent evidence. If only half of one percent of the 241,000 utility patents issued in 2007 were used for calculation, which is 1,205 cases, seven of which were successful, the odds of winning were well under one percent—about one in 172. Considering the average cost of a case was around $650,000, it seems that our rights as first-to-invent inventors was more theoretical than real. The system was workable for companies with deep pockets but impractical for most independent inventors.

A Simpler Notebook

Now that first-to-file is the law, do we toss our notebooks in the recycle bin? No way. We use a simpler notebook with a new purpose.

There are thousands of unsolved problems and invention opportunities around us, and when we identify them, we should immediately record them. Full-size notebooks are usually impractical, but a pen and paper can easily be carried at all times. How often have you needed to write someone's contact information down or make a note about something and not had a scrap of paper or a pen? Fold a piece of ordinary copy paper three times and keep it in your pocket or purse. As soon as it's convenient, transfer the information to your notebook.

No longer do we need numbered pages and sewn-in bindings to prove the authenticity of our entries. I recommend a student notebook commonly available at office supply stores. When we

Dmitri Mendeleev saw the periodic table of the elements in a dream. August Kekule was form of benzene until he dreamed of a snake writhing until it finally bit its own tail, thereby

notebook:

ALIVE, WELL—AND INDISPENSABLE

BY JACK LANDER

enter invention opportunities in our notebooks, we might say that we are "inventing on purpose."

We inventors continually discover opportunities—needs, wants and annoyances—the irritating grains of sand around which great pearls are grown. Defining and recording these opportunities in writing gives us an edge in the inventing of solutions. Writing is a code for thought programming, whereas abstract thought alone is elusive and undisciplined. How many times have you had a great idea that was so clear at the time that you were sure you couldn't possibly forget it? And then, over a short time, it evaporated—gone, perhaps, forever.

Trust Your Subconscious

Doubts and self-censoring delay solutions. Evaluate solutions only after they have come to you in completed form. History has many tales of subconscious inventions and discoveries. Dmitri Mendeleev saw the periodic table of the elements in a dream. August Kekule was puzzled by the molecular form of benzene until he dreamed of a snake writhing until it finally bit its own tail, thereby forming a ring. Upon awakening, he applied the image to his problem, and the benzene ring proved the solution to the molecular form that had escaped him. Nikola Tesla claimed that all of his inventions, spanning over a period of 20 years, came to him in dreams. The components appeared, and the prototypes worked as he had imagined they would. He didn't say that the need, want or annoyance came to him in dreams. No doubt he had discovered these at the conscious level.

In 1987, I was hired by a very small startup company to solve a bicycle transmission problem that one of the parties to the company had worked on for 13 years. I analyzed what had already done, defined the solution, and let my subconscious go to work. Not long afterward, I was driving through Vermont on a beautiful autumn day, and the solution appeared before me, as though a faint image on the windshield. I might have screamed "eureka," but such solution

There are thousands of unsolved problems and invention opportunities around us, and when we identify them, we should immediately record them.

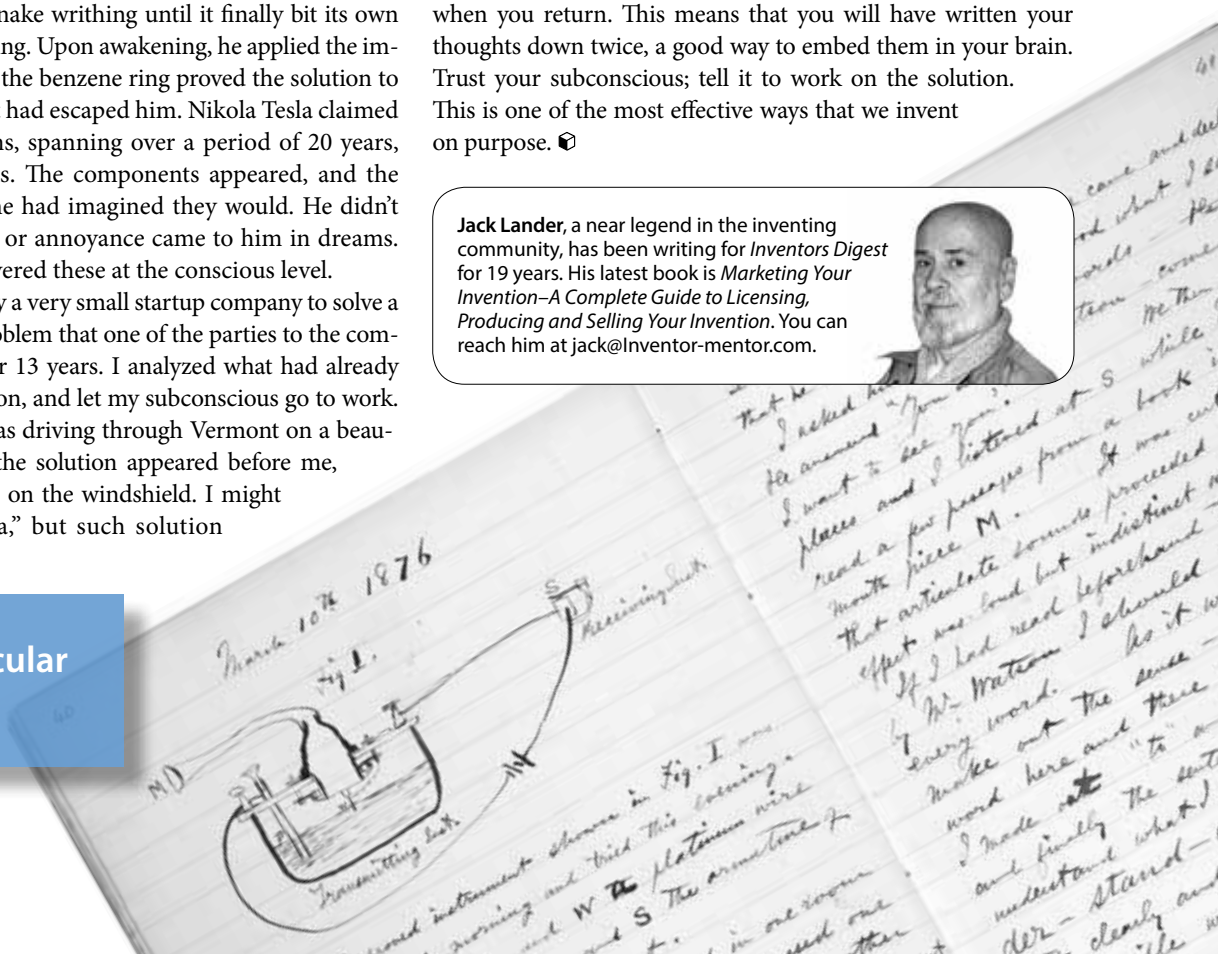
appearances were not an uncommon occurrence in my life. I returned, built a prototype, and it worked as I had imagined, for which I was granted U.S. Patent No. 4,820,244.

Common to these seemingly miraculous inventions and solutions was the recognition of a need, want or annoyance, and the implanting of these seeds into the inventor's conscious mind. An invention often arises from our subconscious soon after we identify and clearly define the need, especially if we define it in writing. Don't dwell on immediate solutions. Record the opportunities so they don't escape and to give your brain time to work behind the scenes.

In conclusion: Carry paper and pen with you at all times. Keep at least one notebook at home and promptly transfer your notes when you return. This means that you will have written your thoughts down twice, a good way to embed them in your brain. Trust your subconscious; tell it to work on the solution. This is one of the most effective ways that we invent on purpose.

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.

puzzled by the molecular forming a ring.



VERSATILE METALS

Unique Properties Important for Prototypes

BY JEREMY LOSAW

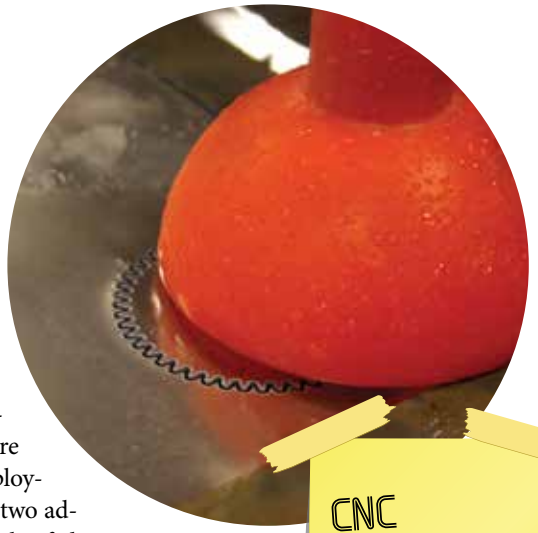
The conveniences of our modern world could not exist without metals. Metals have properties that are useful to engineers: They are hard and durable, conduct heat and electricity, and have a high melting point. These properties make metals versatile building blocks for many important products: refrigerators, vehicles, televisions, telephones, ovens and just about every other cannot-live without commodity.

Metals are not only useful for finished products, they can also be manipulated in a variety of ways to make prototypes. Each method has unique equipment requirements, speed and price points, but when properly used, can yield robust parts that help build products. Following are various ways metals are processed.

Machining

One of the most popular ways to turn a block of raw metal into a finished part is by machining. Machining is a process that uses a tool or a bit to progressively remove small amounts of material (whittle) to achieve a finished dimension. There are many different machining methods, but the two most popular are milling and turning. Milling is done on a milling machine and uses a rotating cutting tool to cut a block of material that is fixed to a moving bed. Turning is done on a lathe and has the opposite setup, in which the raw material is the spinning part, and the tool is slowly moved against it to remove the material.

Lathes and mills are available in both manual and computer numerical control versions. Manual versions are perfect for making quick prototypes and modifications, as the material can be fixtured in the machine and run in under a minute. CNC lathes and mills require a CAD file and additional software to create the instructions that tell the machine where to move. However, they can create complex shapes accurately and quickly, and are much better than manual machines for making large quantities.



CNC CUTTING

Cutting a gear-shaped part for a prototype.

Welding

Welding is a process that allows separate pieces of metal to be rigidly attached to each other. There are many different styles of welding and welding machines, but the most common are electric arc welders. These work by employing electricity to melt the area around two adjoining pieces while a filler rod of metal is fed into the area to join them. Once the pieces are cool, they are very strongly bonded together.

One of the biggest caveats to welding is that the materials being welded together need to be of similar material and thickness. Welding can also cause parts to warp. The process distributes substantial heat into the parts, and when they cool they can warp. Parts that require accurate features need to be machined after welding to get the required accuracy.

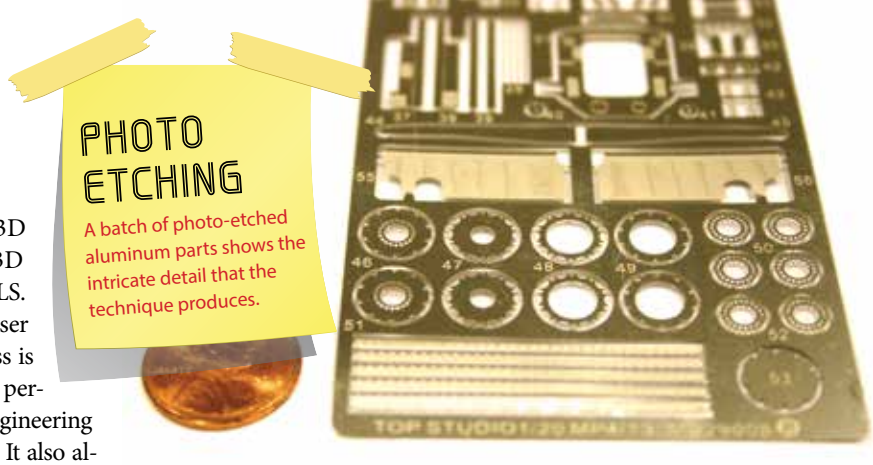
CNC Cutting

A great way to get fast metal parts is by using a CNC cutter, such as a laser or water jet. A water jet uses high-pressure water mixed with an abrasive aggregate to cut through metals. Laser cutting uses a high-powered focused laser beam to burn through the material. In either case, the cutting head is mounted to a motion platform that can be driven from a CAD file to make accurate cuts. Most water jet and laser cutters can only cut two dimensional shapes, but there have been innovations in water jet technology to make angled cuts and round cuts possible.

Both processes quickly produce parts, but they have shortcomings. Laser cutters introduce intense heat into the area around the cut, which can at best cause discoloration, and at worst, a degradation of material properties. Parts cut in a water jet are usually submerged in water so heat buildup is not an issue. However, the jet of water gets progressively wider the further it is from the exit of the nozzle, producing a slight taper on the cut edge of the parts. Despite these weaknesses, water jets are very useful for making prototype parts.

WELDING

Parts being welded for a prototype.



3D Printing

3D printing is not just for plastics. Metals can be 3D printed, too. The primary technology used in metal 3D printers is called direct metal laser sintering, or DMLS. DMLS machines have a vat of powdered metal and a laser that solidifies selected areas to build a part. The process is highly efficient, and the finished parts are more than 99 percent as dense as raw material. DMLS uses authentic engineering metals, such as aluminum, titanium and stainless steel. It also allows for the creation of intricate shapes, such as internal passageways and undercuts, which machining processes cannot make. As amazing as DMLS is, the technology is relatively young and expensive to produce. It is usually viable only for small parts that require the material properties of metal.

Photo Etching

Photo etching creates highly detailed thin metal parts. The process is similar to that of making photographic prints in a darkroom. A photo-sensitive laminate is placed over a thin sheet of metal; then a mask is placed over the laminate and the sheet is exposed to UV light. The sheet is then put in a developer bath and the exposed areas are dissolved leaving laminate to protect the metal in other areas. It is then placed in an acid bath and the unprotected areas of metal are dissolved, leaving the finished part behind.

Photo etching is only possible with metals up to .080 inches thick, but it can be done on just about any type of metal. It does not require special tooling, allowing iterations of part designs to be made cheaply. One of the most common uses for photo etching is for making copper traces for circuit boards and other small electronic parts, but it can also be used to make filter screens, gaskets and springs. While production parts are made by specialist groups, DIY kits are available for home-produced prototypes.

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

IS YOUR INVENTION GREAT, GOOD OR GOOD ENOUGH?

The Proof Is in the Profit

BY JOHN G. RAU

> **"Without question, the greatest invention in the history of mankind is beer. Oh, I grant you that the wheel was also a fine invention, but the wheel does not go nearly as well with pizza."** — DAVE BARRY

For your new invention to be a commercial success, does it need to be great, good or merely good enough? Humor columnist Dave Barry put the debate in perspective when he wrote, "Without question, the greatest invention in the history of mankind is beer. Oh, I grant you that the wheel was also a fine invention, but the wheel does not go nearly as well with pizza."

Definitions of "great" include "remarkable in magnitude, degree or effectiveness;" "markedly superior in character or quality;" and "important, highly significant or consequential." Inventions that have changed the world are easily classified as great.

In comparison, Webster defines the term "good" as "possessing desirable qualities; adapted to answer the end desired; promoting success, welfare or happiness; serviceable; useful." An idea characterized as "good" would be one that accomplishes the end result, promotes success and is useful. My personal choices for inventions that are at least good, if not great, are the TV remote control and the garden hose that doesn't kink.

Inventor Frank Stapleton, author of *How To Make Millions With Your New Idea*, suggests the following five characteristics of great inventions:

1. **Meets a specific need:** Does your invention solve a problem? If not, what is it supposed to do? Is it a widespread problem? If not, then it could be too narrow in scope.
2. **Creates a demand for itself:** Sometimes people don't know what they want until they see it. Other times, the need is there but no one has created the supply. If your idea has merit, it will create a demand for itself.
3. **Appeals to a basic human need:** Every good invention idea makes some kind of appeal to human need. Maybe it's a matter of improving upon an earlier development, but if it doesn't provide for some practical human need—even if it's simply for entertainment—then it won't wash.
4. **Improves its users' lives:** You want your invention to make a mark. The best way to do that is to improve people's lives. If your invention can do that, it's got merit.
5. **It's practical and easily conceived:** Your invention has to be practical. Too pie-in-the-sky and people won't understand it. If it's not too complex, there's a chance your idea will catch on.

As Stapleton points out in his book, "I'm not saying if your invention violates any of these principles then it's no good. A complex idea may very well still succeed if it meets all four of the other criteria, but this is my own list of what it means to have a 'great' idea. Great ideas have the potential to make their inventors a lot of money."

Other perspectives on what constitutes great, good or good enough ideas follow:

Penelope Trunk, in an article titled "How to Tell if You Have a Great Idea," says:

- You need an addressable market.
- You need to solve a problem for that market.
- There needs to be a way to make money.

Business News Daily contributor Kim Ann Zimmerman wrote in the article "Got a Good Business Idea? Here's How You'll Know":

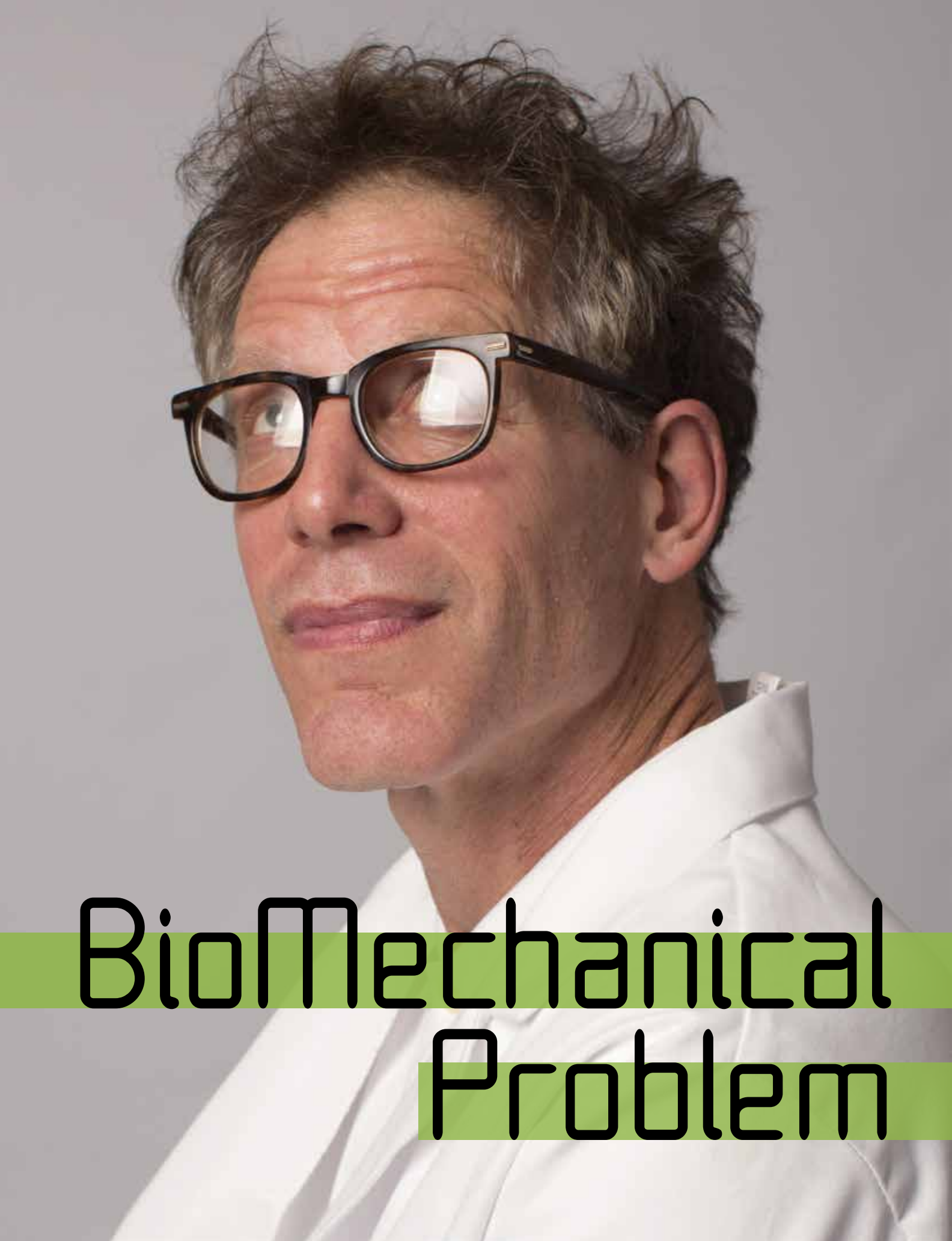
- It is innovative or offers a twist on an existing product or service.
- It is indispensable, even if people don't know that they need it.
- It is exciting in its execution.
- It solves a problem. The problem should be significant and something that impacts a large group of people.
- It has the potential for expansion. Is your idea something that can grow either geographically or through product extensions?

Dharmesh Shah, in an article titled "How To Pick The Right Idea For Your Startup," suggests:

- Your idea needs to do at least one of three things, namely: make something difficult easy, make something expensive cheap or make something that entertains.
- Choose something with a "big market pain," in the sense of providing users with a solution to a major problem or issue of concern to them.
- Choose something through which you can empathize with its users.

In reality, as evidenced by the preceding advice, your invention idea doesn't have to be great, good or good enough. It simply has to meet a need or provide a solution to a problem that people are willing to pay for.

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



BioMechanical Problem

Solver

HOW BILL NORDT, M.D., BRACED HIMSELF FOR SUCCESS

BY CAMA MCNAMARA

How many first-time inventors would take on a company like Dr. Scholl's, single handedly, having no legal background or knowledge of the patent system, with an unproven product? The fact that Bill Nordt, M.D., did that and more gives an idea of the scope of Nordt's passion for his profession as an orthopedic surgeon, as well as his dedication to improving the lives of people who suffer from orthopedic problems.

Nordt holds 35 patents, all related to either preventing patients from having surgery or improving surgical techniques. He has designed surgical instruments, as well as implantable and external devices that restore the forces and pressures of the joints in the human body—a skill that came somewhat naturally to the physician, whose parents owned a precision machine shop in New Jersey.

The DonJoy Reaction WEB Knee Brace features an innovative elastic webbed design paired with flexible hinges to provide stability for the knee. It also absorbs shock and shifts weight from the painful area, enabling users to continue activities they enjoy. The device is worn by athletes ranging from young soccer players to members of the U.S. Ski Team and professionals athletes around the world.

Mechanical Problem-Solving

Growing up in the family business, Nordt shadowed tool and die makers responsible for figuring out solutions to mechanical problems. He learned not only how to logically solve mechanical problems, but also became adept at using his hands in doing so. Over the years, as he learned to appreciate the value of hard work and discipline—traits his parents emphasized—Nordt also realized that in the blue-collar town where he grew up, doctors, lawyers and dentists were considered the epitome of success. When it came time for college, Nordt determined that medical school was his best option.

During his training, Nordt's peers labeled him as the "orthopedic type," but it wasn't until he was exposed to a variety of subspecialties that Nordt discovered for himself that he was most comfortable within the parameters of orthopedic surgery. Although industrial machinery and orthopedics may not, at first, seem to have much in common, Nordt was able to apply many of the same principles and problem-solving skills he learned in the machine shop to restoring the biomechanics of the human body.

"One of the exciting things about medicine," he says, "is when you can develop new solutions to old problems. Orthopedic surgeons are constantly faced with solving biological and mechanical problems. After many years of training and study, you finally get to the edge of what is known and what is theoretical. That is the point where discoveries are made, and it becomes very exciting. The harder I look at a patient's problem, the more likely I am to find a solution. My job is a high-rewards subspecialty because I often see immediate results: sometimes it's in a post-operative x-ray; others it's an athlete back on the field within weeks. I love my work."

Nordt went on to specialize in joint reconstructive surgery and replacement, but always maintained the importance of non-surgical treatment of many musculoskeletal disorders. Common overuse syndromes such as plantar fasciitis, carpal tunnel, bursitis of the shoulder, shin splints, generic knee pain, low back pain and tennis elbow—that he saw every day—were very amenable to conservative treatment programs. What was missing, he believed, was the right device.

OPPOSITE PAGE PHOTO BY IAN O'ROARTY; ABOVE PHOTO BY JEREMY LOSAW

Bill Nordt addresses employees at Enventys in Charlotte, N.C.

Dueling Doctors

Nordt's first patent was on a device to alleviate the symptoms associated with plantar faciitis, one of the most common causes of heel pain. The pain results from inflammation of the plantar fascia, tissue that runs across the bottom of the foot and connects the heel to the toes. During laboratory experiments in 1994, Nordt's analysis of foot mechanics resulted in his first product—a simple device that increased plantar fascia tension. In getting the product to market, however, he learned a few things through the school of hard knocks that weren't taught in medical school.

Uncertain of what to call his new invention, a friend suggested "DynaSlipper." "Anything with 'dyna' in the name sells," his friend told him. DynaSlipper it was.

With complete confidence that his device was "the next big thing," Nordt, with no knowledge of product development, undertook the manufacturing and distribution of the DynaSlipper on his own. After substantial investments of time and money, Nordt managed to get DynaSlipper to market, only to receive a letter soon after from attorneys at Dr. Scholl's® that he was being cited for trademark and copyright infringement. Although his product was unique, the name DynaSlipper, it seemed, was too close to the name of a product marketed by Dr. Scholl's.

Rather than changing the name or paying an attorney, Nordt fought the company himself. "Their attorney was the former head of the United States Patent and Trademark Office, and I had no legal background," Nordt says. "We were supposed to present a legal brief producing the background of our inventions. Mine was 20 pages and 'replete with errors,' to quote the judge; theirs could fill a room."

At that point, Nordt said he realized that he needed an 800-pound gorilla on his side. "Big companies," he says, "have unlimited resources to protect their territory."

Needless to say, Nordt lost the case and, in retrospect, wishes he had made the name change when he first received the letter. Nordt speaks from experience when he says, "The moral of the story is: Get a distribution partner."

Nordt went on to successfully market the renamed OrthoSlipper, as well as a device to treat shin splints, the Rocket Orthotic, but after dealing with the conflicts associated with getting a product to market while simultaneously maintaining his practice, Nordt decided to take his next idea—a knee brace—in another direction.

Call In the Experts

"I knew I needed engineering expertise, designers, prototypes and a manufacturer," he says. Through conversations with those in the medical device industry, in 2002, Nordt was introduced to Louis Foreman, CEO of product development firm Enventys. The two entered into a collaborative agreement to design and develop a series of braces.

Nordt had a novel idea for a new category of braces. "There have been a variety of knee braces on the market," Nordt explains, "that work through many factors, including structure and fit. Most have lower-level structural features and a minimum of support. Much of the technology and materials, at the time, were antiquated. My concept was to use a framework of elastic material to provide support and return kinetic energy to the knee."

Although the initial prototype was developed quickly, it took a couple of years to get a solid working prototype. This included weekend meetings in hotels and restaurants between Virginia, where Nordt lived, and Urbana, Ill., where Charlotte, N.C.-based Enventys had engineering departments.

At the same time the team was working on the knee brace, they began to develop other overuse-symptom devices. "With one product, it's hard to make an impact (on the market)," Nordt says. "With a group of products, you have more impact potential, but it also takes more time, finances and resources to get them there."

Nordt acknowledges that he was inspired by the team effort. "When you're working with a group of extremely talented engineers, you can let your imagination fly," Nordt says. "There are always design features that can improve a product. I was in pursuit of the perfect brace. We would get together and make changes in

Advice For Inventors

from Bill Nordt, M.D.

"When people ask me the best way to get a product to market, I tell them to find a partnership, to get a licensing agreement, to take their ideas to a big company and let them bear the burden. In the end, try to arrange a royalty agreement. It's the highest reward for the lowest risk." — BILL NORDT, M.D.

In addition:

- Focus on products in your field of expertise.
- Know your customer.
- Your own time is your most valuable resource. Use all you have.
- Don't try to do it all. Pursue partnerships.
- Be adaptable. Have a Plan B and C, in case Plan A fails.
- The first product doesn't have to be perfect—just better than your competition's.
- Manage your expenses. Have an idea of the cost of taking your invention to market before delving in, including those associated with legal fees, product development and distribution.
- Don't make your spouse mad. (Every little bit of support helps. …)

"One of the exciting things about medicine, is when you can develop new solutions to old problems. Orthopedic surgeons are constantly faced with solving biological and mechanical problems." — **BILL NORDT, M.D.**

the products, and say 'if you can do this, you can do that,' and then we would be back to the drawing board. Of course, while we were developing these products, the legal team was working on patents to protect them, which means more time and resources."

The escalating process of product development proved to be a learning experience for Nordt, who says he eventually arrived at a moment in which he had to regroup, rethink and research his options. "I'm first and foremost a doctor," he says, "not a product developer. There were times I had to ask myself, 'Do I keep going? Another month? Another dollar?' Although you might hope to have grandiose success, at some point you have to face reality."

Ultimately, Nordt realized that he had to stay focused on getting as direct a line as possible on the path to a marketable device. After evaluating each product in the pipeline, it was determined that the knee brace had the greatest likelihood of success.

In the final phase of product development, engineers developed a structurally sound, lightweight, kinetic knee brace that, upon movement, returns energy to the knee. An important element was the development of the silicon-based elastomer that the low-profile, web-like frame, which grips the knee, is composed. This material exerts tension, returning energy to the knee.

The Road Well Traveled

With a viable product, Nordt and Foreman zeroed in on distribution partners and participated in what Nordt refers to a "traveling road show." Nordt says that the big black hole in product development is distribution, explaining his plans to reach a licensing agreement with a brace company, rather than marketing the device on his own. "You can have the best product in the world, but unless you have a distribution vehicle, it's really difficult (to get it to market), particularly if you have only one product.

"If you look at the website for the USPTO, you see thousands of great ideas that never made it to market," Nordt continues. "You even see plenty of great brace ideas that didn't make it. The trick is get a prominent share of the market, with the shortest path to penetration."

That path included trying to convince some of the country's largest medical companies that Nordt's brace was a worthwhile investment. Although they generated interest, Nordt and Foreman failed to peak the level of interest necessary for a licensing agreement. The first hurdle: There were multiple products on the market to treat overuse. The second: "A lot of large companies don't want to embrace new products, particularly if they are developed externally," says Nordt. "Revolutionary ideas can be killed easily by a large company unwilling to take that risk.

"There is a little bit of luck involved in finding the right people in the right room at the right time," Nordt continues. "Momentum stalls, and although you work hard to make something happen, you make mistakes along the way. Louis taught me a lot about boardroom negotiation."

Nordt's luck improved when he approached executives at DonJoy, the No. 1 brace manufacturer in the world. The company's representatives were impressed at the quality of the product yet reluctant to take it on. Nordt was informed that if he would have the brace manufactured, the company would assess it for future development.

With that in mind, the Enventys team, along with members of the company's Taiwan office, developed the tooling and manufacturing for the brace. After a series of trials and tribulations, the braces were shipped and test-marketed. Nordt devised a complicated distribution process that included an Internet-based company, one that specialized in big-box retailers, plus the test-market with DonJoy. Fortunately, during this crucial phase, DonJoy did well with the brace and entered into a licensing agreement. "DonJoy proved to be a superb licensing partner, not only taking extra steps to improve the product through manufacturing details, but also the sizing, packaging and distribution," Nordt says about what became the DonJoy Reaction WEB Knee Brace. "They are an incredible company and brought the brace up to the highest standard."

Bracing for Change

Noting that millions of people have overuse problems, particularly baby boomers, Nordt is currently working on multiple braces—all in various stages of prototype development. Nordt says this aging generation has little tolerance for disability or pain. "Boomers want to stay as pain-free and active as possible as they grow older," he notes, "and they are looking for performance-enhancing devices, such as the knee brace, to make their lives easier."

Nordt has also turned his attention to understanding how to teach people activities and exercises that reduce forces on their joints, thereby increasing the joint's longevity; for example, how to carry their weight to improve the longevity of the knee. "I really want my patients to understand how to diminish pain and improve mobility without surgery," he emphasizes.

He is also in the process of finding partners to develop a pain control company. "The goal of orthopedics is to diminish pain and improve mobility," Nordt says, "and I continue to bring players and resources together to make that happen—something like the Dr. Scholl's of orthopedic pain syndromes."

And the OrthoSlipper? The last of them went up in smoke in a recent bonfire. Nordt says it's called "product senescence."


HELLO HANDSOME!

Fastest Draw in the World

Bottoms Up Dispenses Beer at Lightning Speed

By Jeremy Losaw

Every "a-ha" moment that results in getting a product to market has an interesting story, but very few start with the inventor narrowly avoiding a five-year prison sentence. That is exactly what Josh Springer was facing in the months before coming up with the idea for the Bottoms Up Draft Beer Dispensing System™. Fortunately, Springer didn't go to prison, giving him the freedom to develop the market's fastest and most efficient system for serving beer—a unique product that is changing the way beer is served around the world.

As the name suggests, the Bottoms Up Draft Beer Dispensing System fills specially designed cups, pint glasses and tubes from the bottom, rather than the top. The bottoms of the containers are fitted with magnetic discs that open when they are placed on the dispensing system to fill—and instantly seal, adhering to a metal ring surrounding them—when removed to serve. The unit is controlled electronically, with preset fill volumes enabling hands-free operation.

While Bottoms Up may seem like a novelty, the system's design can considerably increase business profitability. Countertop or installed models contain one to six nozzles and dispense two ounces of beer per second—a rate nine times faster than with traditional taps—with less beer head. Preset automation equates to little overflow and less waste, and it allows servers to better engage customers and conduct sales quicker. The result is more throughput, shorter lines and higher profit margins.

Drug Raids and Daydreams

Inspiration for Bottoms Up came during a time of immense chaos in Springer's life. He was living in Montesano, Wash., working at a sign-making company and doing side jobs for his uncle, who was trying to save enough money to open a bar and restaurant—by manufacturing illegal steroids. Although Springer was not involved in the steroid business, he became a person of suspicion in the investigation.

Three days before Springer's wedding, over 20 members of a Drug Enforcement Agency SWAT team raided his house. At first he thought it was a prank, because his friends had hinted that they were going to "kidnap" him for his bachelor party. Even after the third time the agents told Springer to put his hands up, he was nonchalant. "I have the best friends in the world," he says. "I thought they must have hired actors." Eventually, Springer realized it was a legitimate raid and cooperated.

He was questioned and released, but shortly after his wedding, Springer was brought up on conspiracy charges that carried a five-year prison sentence. In March 2008, in the midst of the turmoil surrounding the case, Springer was sitting at a table in a Mexican restaurant during a birthday celebration for his father, and his mind wandered to beer pitchers. *Isn't there a better way to serve beer?* he wondered. "In my daydream, I saw this pitcher filling through the bottom," he says. "I literally stood up at the table and said, 'Hey, you know what would be a good idea? A pitcher of beer that fills up through the bottom.' " Although everyone thought it was a cool idea; no one thought it could be done.

Crowd Pleaser

After the party, Springer became obsessed. Finding nothing similar after Googling the idea, he immediately set to work. Within five days he had his first working prototype. The project helped Springer keep his mind off of his legal issues, but he was still unsure of his fate. Ultimately, he was given three months of house arrest and three years probation, which turned out to be the key to perfecting the Bottoms Up system. Since Springer had to be home by 5 p.m. as part of the terms of his house arrest, he

PHOTOS COURTESY OF BOTTOMS UP BEER

Josh Springer dispenses beer at warp speed.

was able to devote all of his spare time to perfecting the system. Eventually, he was able to make a prototype that filled 60 beers a minute.

The system worked, but Springer needed validation. After reaching out to breweries in the area, he was invited to take Bottoms Up to an outdoor movie night at the Redhook Brewery in Woodinville, Wash. At the regular events, people sometimes stood in lines for up to 45 minutes to get a brew, and management was looking for a way to serve beer faster. Springer thought the prototype was up for the challenge, but he also knew there was room for improvement.

With the event a week away, Springer took time off from work. He and his friends worked relentlessly to produce a better prototype and 1,500 cups. By the time the day of the show rolled around, the team was ready to put Bottoms Up to the test, but at the last minute it rained, and the event was moved indoors. Brewery management let Springer know they no longer needed his help. The opportunity was too good for Springer to miss; he sent a video of the working prototype, and was asked to come anyway. Even with the smaller crowd, Springer and his beer-dispensing system were a hit. The following Monday, Springer gave his two week's notice at the sign company. He soon scraped together $6,000 from friends and family to get his new company, GrinOn Industries, off the ground.

Full Speed Ahead

What started as a project in Springer's garage has become a rapidly growing, multi-million dollar company that sells to sports and event venues around the globe—but the path to success was not easy. Springer filed patents in the U.S., yet there was further prototyping and designing to get the system to market. Springer taught himself to use CAD software by watching YouTube videos, and he produced the engineering work himself.

He then took the system to a contract manufacturer for production, but ran into problems. The beer was harsh on the electronics, and the early production units were prone to failure. After little success with two manufacturing groups in Washington, he brought the manufacturing in-house and added marine-grade electronics to ensure reliability.

Today, the dispensers, which are approximately the size of a camping stove, are manufactured in Utah. The key to the system is the cup, which is assembled at GrinOn's new location in Indianapolis—a move made to be more centrally located to its customer base and Midwest suppliers.

WHAT STARTED AS A PROJECT IN SPRINGER'S GARAGE HAS BECOME A RAPIDLY GROWING, MULTI-MILLION DOLLAR COMPANY THAT SELLS TO SPORTS AND EVENT VENUES AROUND THE GLOBE—BUT THE PATH TO SUCCESS WAS NOT EASY.

Since the cup costs more than a traditional one—as much as 20 cents more per cup–Springer has diffused the issue by offering custom printing on the magnetic discs. As the beer in the cup slowly disappears, logos appear—at an eye-catching distance. Venues can use that space to promote themselves or business partners. After the beer's gone, the magnet can be stuck on a refrigerator. Anheuser-Busch purchased the rights as the exclusive malt beverage advertiser on the magnets, so if a company doesn't want to advertise, the logo defaults to an image promoting Budweiser, making the cups an affordable 12 cents each.

Springer has an ambitious outlook for his business, which, today, is partially owned by private investors. In addition to increased domestic sales, Springer has filed international patents to protect his idea in other beer-loving countries as the company makes a further global push. Riding the wave of the Bottoms Up slogan, "Draft Beer. Warp Speed.," Springer and his company are moving full speed ahead.

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SYNEK

THE KEURIG OF BEER

BY JEREMY LOSAW

There has never been a better time to be a craft beer enthusiast. An average of 1.2 breweries sprout up every day, and beer lovers are flocking to them in droves. Whether microbrewed, nanobrewed or even picobrewed, one of the biggest problems facing craft breweries is distribution of their product. Steve Young recognized the dilemma and created a system called SYNEK™ to help home brewers and small breweries distribute their beverages to craft devotees—without having to can, bottle or use growlers.

SYNEK is a system that chills, pressurizes and preserves beer. It includes a patent-pending, recyclable bag to hold beer and a dispenser to pour it. The dispenser is roughly the size of a toaster oven and has a draught tap on the front side. SYNEK features an adjustable user-specific cooling element to serve beer at a range of desired temperatures and an adjustable carbon dioxide tank to propel the beer through the tap, and, simultaneously, control the head during the pour.

While the dispenser features a modern, innovative design with multiple features, the real crux of the technology is in the bag. It resembles a high-tech Capri Sun pouch and is specially designed to accommodate the pressure of carbonated beverages. The bag can be filled with any beer that is already on tap by using SYNEK's special adaptor, and it seals out oxygen to prevent the beer from spoiling, keeping beer fresh for more than 30 days.

Stock Analyst Cum Inventor

Young began his career far from the mash tuns and fermenters of a brewery. As a stock analyst, with a mind for market trends, he became intrigued with the craft beer industry after noticing its incredible growth rate in recent years. He undertook an intense coast-to-coast educational journey, hoping to discover why the industry, which is expected to increase by more than 800 breweries within the next two years, was expanding so quickly—and what factors could burst the bubble.

"I started asking brewers on both coasts what they struggled with and the major comment was, 'We make great beer, but it is hard to distribute,' " he says. The reason, Young found, was poor packaging.

"Most of the breweries were too small and cash-strapped to bottle or can, so their only option for retail distribution was growler sales," he says. Once Young had an understanding of the problem that was impacting the industry—a gap in the packaging market between growlers and bottling—he quit his job and started working on SYNEK.

Grasping the critical importance of research, Young spent nine months doing his homework before developing a SYNEK prototype, analyzing the successes and failures of previous beer dispensers. Lacking a technical background or experience in product development, Young knew he needed help. He began

PHOTOS BY DREW DILLMAN - CRAFT CONSCIOUS

Steve Young, CEO of SYNEK, is a former stock analyst.

> "IT IS EASY TO MAKE SOMETHING WORK; IT IS HARD TO GET SOMETHING TO WORK FOR CHEAP, AND EVEN HARDER TO MAKE SOMETHING WORK FOR CHEAP THAT IS EFFICIENT TO MAKE. — STEVE YOUNG


The SYNEK bags are specially designed to accommodate the pressure of carbonation.

attending networking meetings in the greater St. Louis area, and eventually put together a team of engineers that helped him make his dream a reality.

Young funded the prototyping with money saved from his former job. After only three months, the schematics of the product had been figured out. In 2014, he filed for several patents on the system and launched a SYNEK Kickstarter campaign, with a lofty target of $250,000. The product was a runaway hit, ultimately achieving a total of $648,535 in pledges.

Heads Up

With SYNEK vetted on Kickstarter, the actual production of SYNEK began. The prototype built for Kickstarter functioned but required further refinement before it could be manufactured. Four to five additional iterations of the product were made before the prototype was suitable for mass production. "It is easy to make something work; it is hard to get something to work for cheap, and even harder to make something work for cheap that is efficient to make," says Young, of the process.

There was a desire to keep manufacturing in the United States, but assembly costs and some of the components were considerably less expensive overseas. Currently, about 50 percent of SYNEK parts are produced in the United States and exported to the overseas manufacturer to be assembled before reimporting them to the States for manufacture.

Approximately one year after the Kickstarter campaign, the product was ready to ship. SYNEK officially hit the market in June 2015 at a price of $299; each bag is approximately $5. At the time of this writing, more than 1,200 breweries with access to 17,000 brands of beer have placed orders.

On The Road

SYNEK has filed for approximately eight patents, all of which are pending. The technology is still evolving and attorneys are working to file further provisional claims to ensure Young's company receives adequate legal intellectual property coverage for the product being brought to market. Despite the pending IP, Young questions the value intellectual property has added to his company, although he admits it helped persuade him to take SYNEK to market. He was able to read about other beverage delivery technology and gauged his potential risk by analyzing market saturation. He questions, however, how helpful the IP will be in keeping his product protected in the future. "You are never in the clear. Anybody can sue anybody. It just gives you a general indication of where you are," says Young.

The SYNEK team has come a long way in a very short time, and there is much excitement about the potential for the product. To celebrate, Young bought an RV, covered it with SYNEK stickers, and embarked on a 35-city tour to launch the system in selected breweries nationwide. Have SYNEK, will travel.

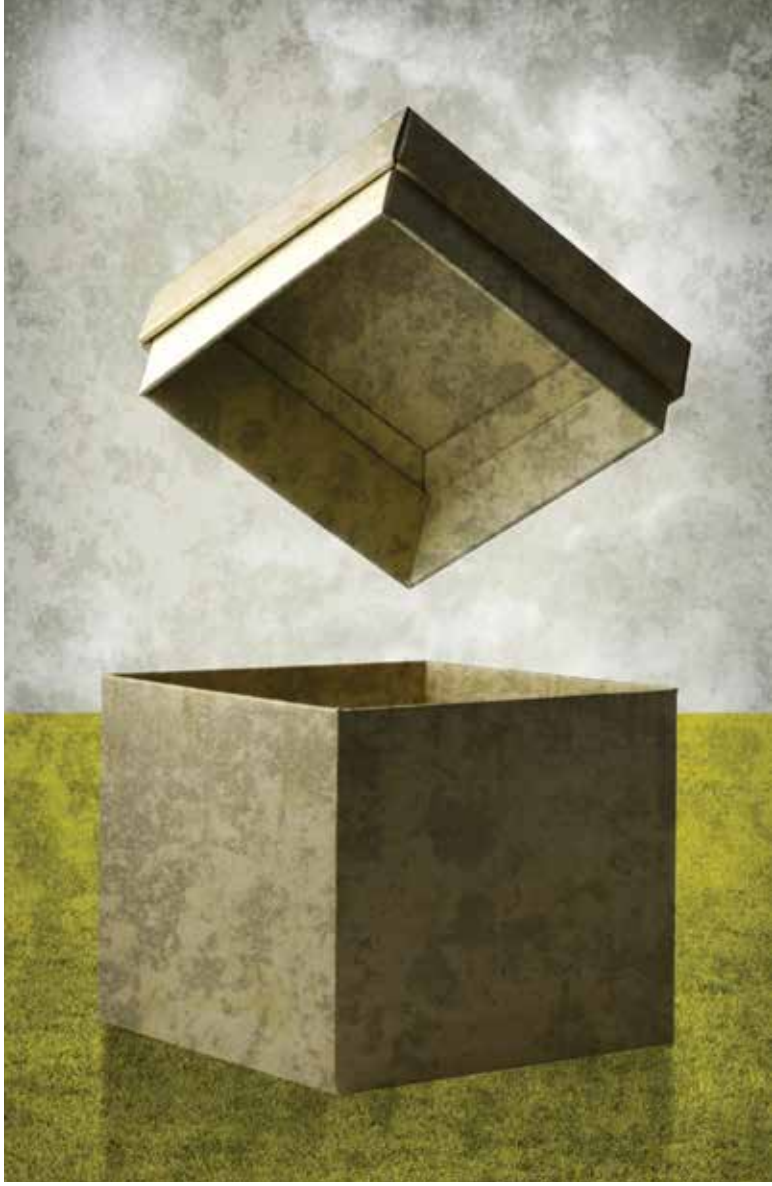
Want to Go?

Visit www.synek.beer/pages/events for the dates of the SYNEK tour.

Why It Is Unnecessary

TO OPEN UP THE PATENT SYSTEM

BY GENE QUINN



Recently, a number of disingenuous articles about the United States patent system portraying patents as bad, indeed, practically evil, have circulated throughout U.S. media outlets. Rarely are these as misleading as the piece authored by Colleen Chien, senior advisor for intellectual property and innovation to the chief technology officer at the Office of Science and Technology, that ran in *The Washington Post* on June 30, 2015. In the article, Chien argued that it is time to open up the patent system, although specifically what that entails and to what end it would be useful, is left unclear and largely unexplained.

For those unfamiliar with patent laws and the U.S. patent system, Chien's suggestion may initially sound like a good idea. After all, Chien argues that it is impossible for someone to donate his technology without fearing that another person will get a patent on it, rendering the well-meaning donation to the public pointless. Such a statement preys upon those who are convinced that patent applicants can and do steal innovations and are awarded patents, instead of the rightful inventor. If that were true, I'd be in favor of opening up the patent system—whatever that means. Unfortunately, Chien builds her argument on a factually erroneous foundation.

Chien's Claims

The problem with Chien's argument starts with her premise, which is entirely incorrect. There is nothing stopping anyone from donating innovations to the public. Further, Chien has it precisely backwards: If an innovation is disclosed to the public, it is not possible for anyone else to patent it, period. Chien has to know this.

Let's back up for a minute and start with Chien's premise, which is summarized in the article as follows:

If an inventor wants to open her technology for others to innovate without worrying about permissions, there is no way to guarantee that the Patent Office will not issue a patent over the technology to a later applicant, an issue that goes to patent quality.

Chien's statement is flat-out false—perhaps even intentionally false and misleading—yet I am reluctant to jump to malice as to the explanation. Long ago, as a new attorney, I was taught by my primary mentor that one should never allege malice when incompetence is a perfectly possible alternative explanation. He told me repeatedly that most people are not malicious, but that many are incompetent. Despite my inclination to give Chien the benefit of the doubt, I admit that it is difficult to imagine characterizing Colleen Chien as incompetent. Notwithstanding, what I can say beyond any shadow of a doubt, is that this article—and the above premise—are horribly misleading.

Anyone with even a passing understanding of patent law has to know that it is completely incorrect to claim that the Patent Office will issue a patent to a later applicant if the innovator has made the innovation publicly available. Obviously, Chien is someone who is well acquainted with patent laws and the U.S. patent system, so why would she make an assertion that seems so ridiculously false? What is her agenda?

"Novelty" Requirements

Allow me to explain why Chien is wrong. For generations, in fact since the Patent Act of 1793, there has been a requirement of newness, or "novelty," as it is called in the industry, to obtain a patent. In other words, for well over 200 years, it has not been possible to obtain a patent on an invention that already exists. So how Chien thinks the Patent Office can issue a patent once someone has opened up their technology to the public is unclear. Is she really unfamiliar with the concept of novelty, which has existed in patent law for at least 222 years?

To be fair, over the past two centuries, the idea of what constitutes the required newness has evolved. Perhaps the most drastic change over that span occurred in March 2013, when the United States abandoned the "first to invent" rule and adopted a "first to file" system, which became effective March 16, 2013, making filing a patent before there has been any public disclosure of the invention of paramount importance.

Grace Periods

An extraordinarily narrow grace period of 12 months still remains, but applicants for a patent are entitled to the benefit of that grace period only in extremely limited circumstances, such as if the applicant disclosed his invention first, and before he filed his patent application there was an intervening disclosure that describes the first inventor's invention.

In these circumstances, the first inventor who disclosed would still be entitled to a patent, despite not having filed prior to their own disclosure. To prevail and remove the intervening disclosure from the universe of prior art, the first inventor must demonstrate that the intervening disclosure was derived from the inventor and actually describes his invention. If there are any differences between the intervening disclosure and the disclosure by the first inventor, at the least, those differences will be used against the first inventor. Thus, the grace period is now extraordinarily limited.

Anyone with even a passing understanding of patent law has to know that it is completely incorrect to claim that the Patent Office will issue a patent to a later applicant if the innovator has made the innovation publicly available.

Significantly, there is no provision that allows the intervening party to file for a patent application and remove the prior disclosure of the first inventor. Someone who files a patent application after there has been a disclosure of the invention will have his application denied because it lacks novelty. Thus, the claims of Colleen Chien, Elon Musk and others who say that patents are sought because that is the only way to prevent others from obtaining a patent are false. If someone invents something and wants to prevent someone else from patenting the invention, all that is necessary is to publicly disclose the invention, such as by publishing a description of the invention. It really is that simple.

There is no way that the Patent Office should issue a patent covering the previously disclosed innovation. If the Patent Office issues a patent, it is a mistake. To correct these mistakes in a more timely, efficient and cost-effective manner, the America Invents Act created new procedural mechanisms that do not require a lawsuit in federal district court. These procedures were universally sought and praised by high-tech companies and others as a way to efficiently correct mistakes. Unless Chien is building an argument based on the inevitable reality that no one is perfect, including the Patent Office, her conclusion is erroneous. Assuming the law is followed, today it is impossible to obtain a patent on an innovation that someone else has previously disclosed.

Improvement Patents

The only other possible justification for Chien's claims is that she sees a problem because it is possible to improve upon an innovation and obtain a patent on the useful, new and non-obvious improvement. Having a problem with the patentability of improvements, however, is a curious position.

Improvement patents have been a part of the U.S. patent system since its beginning, when Thomas Jefferson wrote the statute stating a patent can be obtained on "any new and useful improvement. …" If Chien is taking aim at improvement patents, she is aiming at the wisdom of Thomas Jefferson, which should cause any reasonable person to think twice.

If Chien has an issue with the patentability of improvements, she also takes aim at Thomas Edison, who is widely regarded as the greatest inventor in U.S. history. Many of Edison's greatest inventions were improvements upon previously existing innovations. In fact, Edison's greatest invention, the light bulb, was actually an improvement of previously existing light bulbs.

The entire reason for a patent system is to encourage innovation. The fact that improvements can be patented is precisely one of the features that cause innovation to march forward; it is a feature of the patent system by design. Is Chien really suggesting that no improvement patents should issue after someone dedicates a first, early innovation to the public? Such a bizarre suggestion is not only naive, it is ridiculous. A first innovator does not and cannot have an absolute right to prevent the patenting of improvements he didn't conceive. Such a rule would require a fundamental re-write of the patent laws, abandoning 225 years of history.

What is Chien's agenda? Is she arguing that improvements should be patented without directly asserting that as her goal? Is she arguing that the fact that the Patent Office isn't perfect means that no patents should be granted if someone donates technology to the public? Is she simply making an overly broad and provably false statement for another purpose?

I'm not sure, but I know that this article will cause some readers to come to conclusions that are simply incorrect. Therefore, whatever the agenda or reason, Chien's article is misleading and the ideas in it could cause unnecessary damage to the patent system if it is relied upon by decision makers.

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

Patent Reform Fuels Fear,

PARALYZES U.S. INNOVATION MARKET BY GENE QUINN

I recently co-hosted a program on patent reform with Bob Stoll, former Commissioner for Patents and a current partner at DrinkerBiddle in Washington, D.C. The purpose of the event was to offer different views on patent reform. Going through pending proposals serves little use, given that the major bills in the House (i.e., the Innovation Act–HR 9) and the Senate (i.e., the PATENT Act – S. 1137) are likely to remain in flux until they are voted on in the respective chambers of Congress.

Former Chief Judge Paul Michel provided a keynote presentation and also participated in the first panel. After spending a generation on the United States Court of Appeals for the Federal Circuit, he retired so that he could take public positions on patent legislation, patent reform proposals and the Supreme Court's handling of patent cases.

Definition of D.C.

The tone for the day was set when Michel quoted Chief Judge Howard Markey, first chief judge of the Federal Circuit, and asked: "What's the definition of the District of Columbia?"

Michel explained that Markey always answered: "'The District of Columbia consists of 10 square miles surrounded by reality.'

"So, when we talk about patent reform, we think about it as a Capitol Hill lobbying fest," Michel explained. "If we think about it as changing all the rules for all the companies of all sizes all over the country and every technology, that gives us a little bit of a different perspective. I can only hope that the legislators will consider the longer term…all the companies and all of the impact." We'll see.

Michel is, of course, correct. Many of the reforms pending in the various bills will impact the bad actors in the industry, but only because they will impact all patent owners, whether they are a part of the problem or not. Indeed, patent reform, which has become a perennial event, seems to be an exercise akin to taking out an elephant gun to kill a mosquito.

Uncertainty Causes Fear

Michel also talked about the relatively new post grant challenges to patents ushered in by the America Invents Act, explaining that the challenges have had "a huge impact beyond the parties to these cases, because it's created a sense, an impression, of fear that an enormous percentage of the two million patents that are in force in America today may be subject to being invalidated." Uncertainty is toxic for businesses that require legal and regulatory certainty in order to thrive and ultimately maximize business opportunities. Uncertainty is the end of risk taking,

"Investment in many sectors has already fallen sharply. I'm not an investment person or expert; I'm not an economist…but I think the picture is clear that there's been a huge impact in a very negative direction on investments just because of the AIA."

— FORMER CHIEF JUDGE PAUL MICHEL

whereas innovating is all about risk taking. As a result of the fear created by the uncertainty, "investment in many sectors has already fallen sharply," Michel explained. "I'm not an investment person or expert; I'm not an economist…but I think the picture is clear that there's been a huge impact in a very negative direction on investments just because of the AIA."

Congress is considering even more reforms less than three years after it enacted the most dramatic changes in U.S. patent law and policy since 1952. The new burdens on innovators under the reforms ushered in by the AIA are just beginning to be understood. It hardly seems a wise time for additional uncertainty.

It's About Markets, Not Technology

As discussion of patent reform filters through the Capitol, in the press, at the Patent Office and in offices across the country, the universal focus is on technology and innovation. Michel explained, however, that even if every decision of the Patent Trial and Appeal Board is identical to those reached by district courts, the climate created is problematic "because it's not really, in the end, about technology, or even about law; it's about markets and the market for investment in R&D and commercialization."

Michel admitted that people who are "more knowledgeable" than he say that the AIA and Supreme Court cases going back to *eBay v. MercExchange* and through *Mayo v. Prometheus* and *Alice v. CLS Bank* are already having a significant impact on decisions of where and whether to invest in R&D. But for Michel, the biggest problem relates to what he refers to as "a huge cultural change." In recent speeches, Michel has talked about how the patent system has largely operated based on an honor system. Times have changed.

Michel explained: *It used to be, in my opinion, that we had something you could call an honor system in this country. So, for example, in the 1990s, IBM licensed to thousands of entities, tens of thousands of patents for important technologies, and never had to file a lawsuit. Their program was so huge that it netted profits of several billion dollars a year and required no litigation at all. Why? Because the honor system was in effect then.*

David Kappos and I became affiliated with something called the Intellectual Property Exchange International, which was an attempt to create something like the New York Stock Exchange for patent rights. It would be totally transparent, non-discriminatory, open market-based pricing and so forth. It went out of business on April 30th, because despite having numerous portfolios that looked to me to be of very high value and that had been independently vetted for validity and economic impact, in the end every one of the apparent infringers declined to buy a license. In every one of the cases, the business people in the infringing company wanted to buy a license and [it] would go right up the line; yes, we should take a license; it's a good business deal, and it was very good because they could buy not only a license very cheaply going forward but six years of backward immunity, and most of them had been practicing these technologies for years and years. So the dollar amount of infringement damages could have been quite huge. So what happened in the end? What happened in the end was either at the CEO level or when they consulted outside counsel—in every single case—every perspective licensee was told by their outside lawyers do not negotiate, do not license, do not respond, throw away the letter, don't answer the phone call, don't do anything unless and until they sue you. If they sue you, call us and we'll defend you and…maybe we can invalidate some or all of the patents in an IPR, and we can outlast almost any plaintiff. So in the end, nobody took a license, so the enterprise of creating a stock market for patent rights collapsed, went away.

I mention this story simply because it's further illustration of what a complete sea change we've seen in this country already, so, to me, that raises big questions about the risks of further negative changes if we have reform that's not really well thought out.

The Consequences of Efficient Infringement

Michel is correct. Changes in patent law over the last decade have made it a far better business decision to infringe. There has always been concern in the patent-holder community about something called the efficient infringement theory. Under this theory, it makes more sense to infringe rather than to negotiate and seek an amicable resolution. In the past, this was a problem largely isolated to small businesses and independent inventors, who simply didn't have the resources to fight when their rights were being infringed by a large entity that was not interested in participating in a responsible way in the honor system that Michel describes. Today, however, efficient infringement is alive and well, and is a problem for all patent owners.

Mike Remington, an attorney with DrinkerBiddle and a participant in the first panel, explained that even well-funded universities are witnessing their negotiating leverage evaporate. Even with respect to the revolutionary technologies created at places such as the University of Wisconsin,

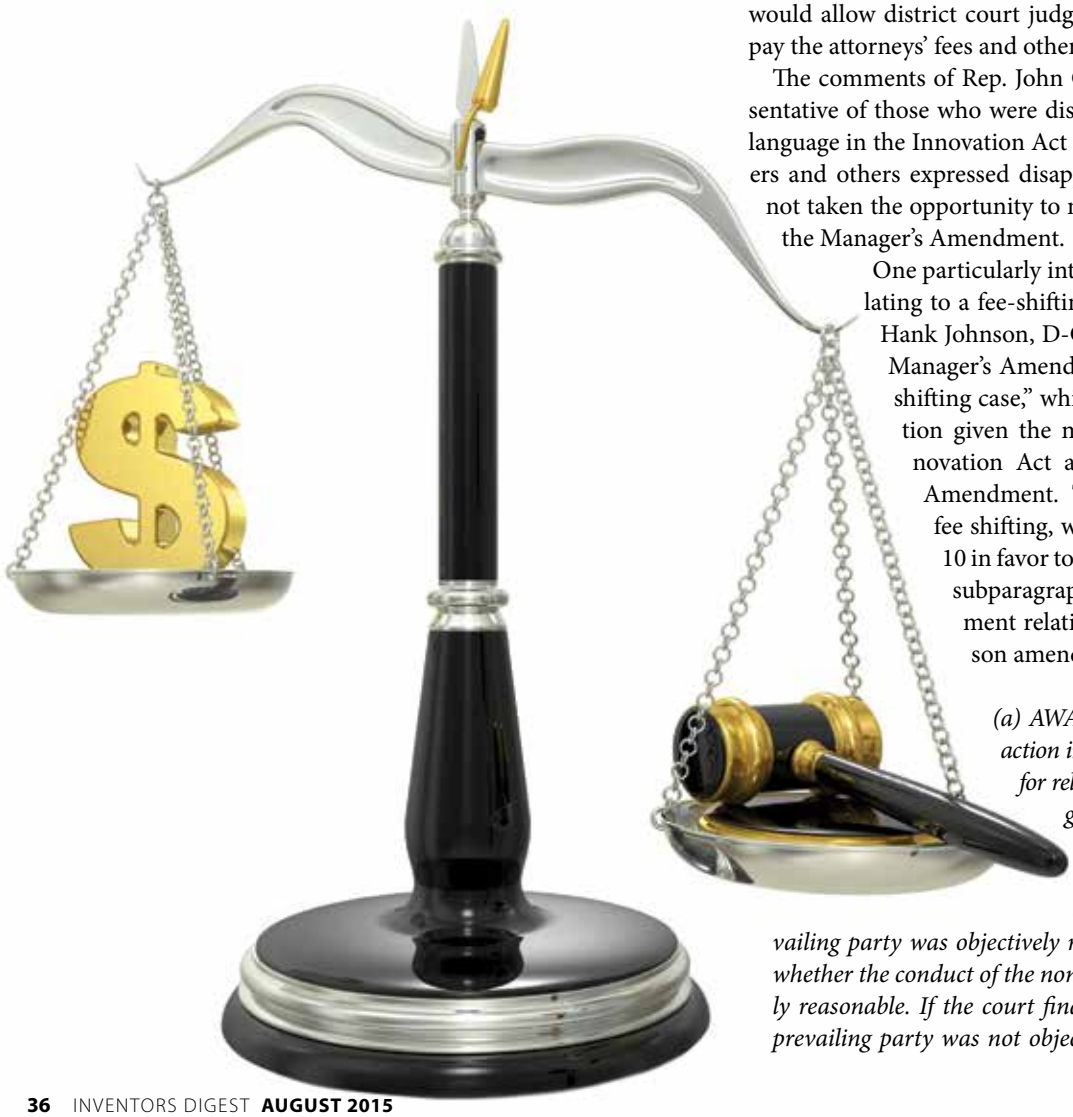
(Continued on page 42)

Patent Reform 101

A COMPARISON OF CURRENT FEE-SHIFTING LANGUAGE

BY GENE QUINN

On June 11, 2015, the House Judiciary Committee conducted a hearing for the purpose of marking up the Innovation Act (H.R. 9). Ultimately, the Committee accepted the Innovation Act as amended by a vote of 24 to eight. Interestingly, virtually every member of the Committee, including Rep. Bob Goodlatte, R-Va., chair of the House Judiciary Committee, acknowledged that additional work is necessary on the language of the bill before a vote is taken by the full House of Representatives. This is in stark contrast to the manner in which the America Invents Act was handled just a few years ago. Once the AIA left Committee, amendments were not accepted, and those offered on the House floor were summarily defeated. The handwriting was on the wall.



Recalling the way the AIA left the Committee in 2011, members of the Judiciary Committee continued to seek reassurances from Goodlatte that they would be included in further discussions to modify language of the bill as the Innovation Act moves on to the floor. Goodlatte repeatedly reassured members that their withdrawn amendments would be considered and urged them to refine certain language to make the proposed amendments more palatable.

Fee-Shifting Language

Anyone who has followed patent reform knows that fee-shifting provisions are a particularly contentious issue. Fee shifting relates to proposed legislative changes to U.S. patent laws that would allow district court judges to order the losing party to pay the attorneys' fees and other costs of the prevailing party.

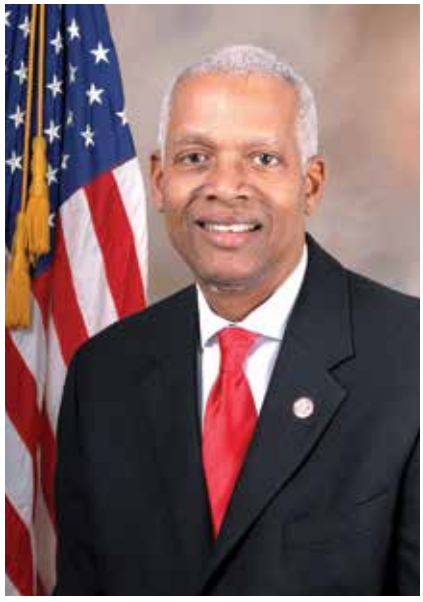
The comments of Rep. John Conyers, D-Mich., were representative of those who were disappointed that the fee-shifting language in the Innovation Act had not been improved. Conyers and others expressed disappointment that Goodlatte had not taken the opportunity to modify fee-shifting language in the Manager's Amendment.

One particularly interesting exchange occurred relating to a fee-shifting amendment offered by Rep. Hank Johnson, D-Ga. Johnson explained that the Manager's Amendment "makes every case a fee-shifting case," which is an accurate characterization given the mandatory language of the Innovation Act as amended by the Manager's Amendment. The Johnson Amendment on fee shifting, which was defeated by a vote of 10 in favor to 22 opposed, would have struck subparagraph (a) of the Manager's Amendment relative to 35 U.S.C. 285. The Johnson amendment read as follows:

(a) AWARD.—In connection with a civil action in which any party asserts a claim for relief arising under any Act of Congress relating to patents, upon motion by a prevailing party, the court shall determine whether the position of the non-prevailing party was objectively reasonable in law and fact, and whether the conduct of the non-prevailing party was objectively reasonable. If the court finds that the position of the non-prevailing party was not objectively reasonable in law or fact

or that the conduct of the non-prevailing party was not objectively reasonable, the court shall award reasonable attorney fees to the prevailing party unless special circumstances, such as undue economic hardship to a named inventor or an institution of higher education (as defined in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a))), would make an award unjust. The prevailing party shall bear the burden of demonstrating that the prevailing party is entitled to an award.

(b) DE MINIMIS *AND IMMATERIAL EXCEPTION FOR AWARD.—The court may not award attorney fees under this section based on allegedly unreasonable litigation positions or actions of non-prevailing parties that are* de minimis *or are not material to the consideration or outcome of the litigation.*



Rep. Hank Johnson, D-Ga.

If you read the fee-shifting language in the Innovation Act and compare it against the language in the PATENT Act, there is a substantial, substantive difference.

Johnson explained that the language of his amendment would essentially adopt the language in the PATENT Act, which passed the Senate Judiciary Committee in early June.

Goodlatte was incredulous, clarifying that he sees no substantive difference between the current fee-shifting language in the Innovation Act and the language found in the PATENT Act. Whether you agree with fee shifting or not, it is almost impossible to take Goodlatte's comment at face value. How could he believe that there is no substantive difference between the two? If you read the fee-shifting language in the Innovation Act and compare it against the language in the PATENT Act, there is a substantial, substantive difference.

House versus Senate

The key language that sets forth the standard that will be applied by the district court judge in determining whether to award the prevailing party compensation for their attorneys' fees is found in subparagraph (a) in both the Innovation Act and in the PATENT Act. While both bills allow for consideration of special circumstances, it is clear that the House version of fee shifting found in the Innovation Act requires attorneys' fees to be awarded in all cases, unless there is a finding by the court that the non-prevailing party took positions that were reasonably justified in law and fact. This clearly creates a presumption that attorneys' fees are to be awarded unless there is a satisfactory showing. To the contrary, the language of the Senate bill takes the direct opposite approach, requiring attorneys' fees only if the district court makes a finding that the non-prevailing party took positions that were not objectively reasonable. Thus, the Senate bill creates a presumption that attorneys' fees are ordinarily not awarded, but can be awarded if there is a satisfactory showing.

The difference between the House and Senate bills boils down to the presumptions made and who will wind up bearing the burden of proof. Goodlatte is sophisticated and knowledgeable. Surely he has to understand that there is a difference and that the difference is meaningful.

The issue of fee shifting is worth watching closely. It seems unlikely that the Senate will agree to the mandatory fee-shifting provisions found in the Innovation Act. Sen. John Cornyn, R-Texas, is the driving force behind the Senate fee-shifting language. If the House does not move toward the Senate version of fee shifting, this could create a showdown that ultimately could derail the legislation. Of course, there are a variety of other issues, including inter partes review reform that could similarly derail the legislation. In fact, despite both the Innovation Act and PATENT Act passing their respective Committees by an overwhelming vote, the fate of patent reform remains uncertain. Sens. Cornyn and Chuck Schumer, D-N.Y., have worked to scale back expectations of supporters, acknowledging that real hurdles to passage still remain.

University Exception to Fee Shifting in PATENT Act

WON'T HELP TECH TRANSFER OFFICES

BY GENE QUINN

One of the more contentious patent reform issues is associated with statutory fee-shifting language that would codify a loser pays system. In an attempt to win support from universities that have come together to oppose patent reform, Sen. Chuck Grassley, R-Iowa, added language to the fee-shifting provisions in the PATENT Act that would offer an economic hardship exception to fee shifting for "an institution of higher education." While this may sound reasonable, it raises several important questions.

First, if fee shifting is so important to the functioning of the patent system, why should anyone be exempt? It doesn't seem appropriate to sweeten the pot for universities in an attempt to buy off their opposition, while other patent owners, including small businesses and startup companies that overwhelmingly create the most jobs, are not similarly exempted. If loser pays is what Congress wants, then there is no reason not to apply it across the board. If the loser paying the attorneys' fees of the prevailing party is such a great idea, then it has to be applied evenly, without exception.

Second, even if the university exception is well intended, it creates at least two tiers of university patent owners. In other words, the PATENT Act favors certain universities and discriminates against others. Ironically, two of the entities that are discriminated against are Iowa State University and the University of Iowa, the two flagship institutions in Grassley's home state. But these universities are not the only institutions that won't be able to take advantage of the economic hardship exception to fee-shifting provisions.

The University Exception to Fee Shifting

The reason that Iowa State, the University of Iowa and many other institutions find themselves on the outside looking in is because of the manner in which they have structured their patent ownership and licensing efforts. Like many universities, Iowa State and the University of Iowa place ownership of patents outside the institution and in the hands of a research foundation, which is a separate entity. The Iowa State University Research Foundation and the University of Iowa Research Foundation each own the patents of Iowa State University and the University of Iowa, respectively.

Unfortunately, because the PATENT Act specifically ties the economic hardship exception to fee shifting to "an institution of higher education (as defined in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)))," standalone, non-profit technology transfer organizations simply do not qualify as institutions of higher education.

Some may race to the conclusion that this lack of protection must have been an oversight on the part of the Senate Judiciary Committee. If it was, Grassley and his staff need to explain. Later in the PATENT Act, there is a provision that clearly envisions the act being applicable to both institutions of higher education and to those entities that own patent rights on their behalf, such as research foundations.

For example, under the PATENT Act there are certain certifications that may be required of the patent owner, if the defendant files a statement alleging "that the primary business of the party alleging infringement is the assertion and enforcement of patents or the licensing resulting thereform." This time, the PATENT Act exempts institutions of higher education and research foundations. The language of the PATENT Act specifically exempts an "institution of higher education…or a nonprofit technology transfer organization

whose primary purpose is to facilitate the commercialization of technologies developed by one or more institutions of higher education. …" This language relating to non-profit technology transfer organizations is missing from the economic hardship exception to fee shifting.

Under universally accepted canons of statutory construction, the PATENT Act, as written, would be interpreted such that research foundations and other non-profit technology transfer organizations would be subject to paying the fees of the defendant if they were to lose a patent infringement lawsuit. They would not, however, need to make the certifications required by the bill.

This would be argued in court as follows: In one section of the statute, Congress clearly exempted non-profit technology transfer organizations, so we know that they were aware of the existence of such organizations and that they would not fit within the definition of an "institution of higher education." Thus, the failure to allow non-profit technology transfer organizations to avail themselves of the economic hardship exception to fee shifting must have been intentional.

In addition to research foundations, numerous entities, such as STC.UNM (a separate non-profit that holds title to patents from the University of New Mexico), non-profits associated with medical schools and hospitals associated with institutions of higher education, would be left out of this hardship exemption.

Conclusion

Was the Senate Judiciary Committee trying to pull a fast one on non-profit technology transfer organizations that operate outside the corporate existence of an institution of higher education? I doubt it. What this shows is that in order to make a bad bill more palatable, Grassley has created a scenario whereby certain universities will be treated differently, simply because of the corporate structure they employ for the purpose of owning patent rights. Of course, this is what you get when line items are added to legislation to appease special interests—numerous unforeseen and unintended consequences.

Below is a partial list of research foundations that would not be entitled to the economic hardship exception to fee shifting—if the PATENT Act were to become law.

- Auburn Research Foundation
- Binghamton University Research Foundation
- Brown University Research Foundation
- California State University Chico Research Foundation
- Clemson University Research Foundation
- Colorado State University Research Foundation
- Cornell Research Foundation
- East Tennessee State University Research Foundation
- Florida State University Research Foundation
- Georgia State University Research Foundation
- Georgia Tech Research Corporation
- Indiana University Research Foundation
- Kansas State University Research Foundation
- Louisiana State University Research and Technology Foundation
- Louisiana Tech University Research Foundation
- Northern Illinois Research Foundation
- Northern Kentucky University Research Foundation
- Ohio State University Research Foundation
- Oklahoma State Research Foundation
- Old Dominion University Research Foundation
- Penn State Research Foundation
- Purdue Research Foundation
- Research Foundation for the University of Albany (New York)
- Research Foundation for the State University of New York (SUNY)
- Research Foundation of the City University of New York (CUNY)
- Research Foundation of the University of Buffalo (SUNY)
- Research Foundation of the University of West Florida
- San Diego State University Research Foundation
- San Jose State University Research Foundation
- Texas A&M Research Foundation
- University of Akron Research Foundation
- University of Alabama Birmingham Research Foundation
- University of Connecticut Research Foundation
- University of Delaware Research Foundation
- University of Florida Research Foundation
- University of Georgia Research Foundation
- University of Illinois Research Foundation
- University of Kentucky Research Foundation
- University of Louisville Research Foundation
- University of Massachusetts Research Foundation
- University of Memphis Research Foundation
- University of Mississippi Research Foundation
- University of Nevada Las Vegas Research Foundation
- University of North Carolina Wilmington Research Foundation
- University of North Dakota Research Foundation
- University of Rhode Island Research Foundation
- University of Southern California Research Foundation
- University of Southern Mississippi Research Foundation
- University of South Florida Research Foundation
- University of Tennessee Research Foundation
- University of Utah Research Foundation
- University of Virginia Patent Foundation
- University of Wisconsin-Milwaukee Research Foundation
- Utah State University Research Foundation
- Virginia Tech Research Foundation
- Washington Research Foundation
- Washington State Research Foundation
- Western Kentucky University Research Foundation
- West Virginia University Research Foundation
- Wisconsin Alumni Research Foundation

The Supreme Court Is Ruining the U.S. Economy

—WITHOUT PRECEDENT OR AUTHORITY

BY GENE QUINN

Patent law has always swung like a pendulum—between more restrictive regimes, in which patent owners have few meaningful rights, and back to those in which patent owners enjoy strong property rights. Unfortunately, throughout history, more time has been spent on the end of the spectrum in which rights are hard to obtain and easy to ignore.

It is easy to get caught up in the shifting laws and easy to understand why innovators and patent owners are focusing on the trees, rather than the forest, since there has been such upheaval in United States patent law over the last decade. Innovators and patent owners are on their heels, playing defense in multiple forums—whether it be on Capitol Hill, at the Supreme Court, at the Federal Circuit or at the Patent Trial and Appeal Board of the United States Patent and Trademark Office.

Congress has turned decidedly anti-patent over the last few years, but there are signs of hope. Patent reform has moved forward slowly in the 114th Congress, and the proposed bills have inched in a more pro-innovator direction, although many close observers continue to believe that patent reform this year remains a 50-50 proposition.

Supreme Court Weighs In

While the debate continues, the United States Supreme Court has proven to be a destructive force for the patent system. Indeed, over the last few years, the Supreme Court has become extremely active in the area of patent law. It has made decisions on a number of cases that have significantly altered the patent landscape and negatively affected patent value. Without any legitimate statutory precedent or authority, the Supreme Court, in my opinion, is ruining the U.S. economy.

As a lawyer, it is hard to watch the Supreme Court. I increasingly wonder how anyone could teach either patent law or constitutional law without simply acknowledging to students that there is no rhyme or reason in the decisions of our nation's highest court. The truth is that the chief justices do what they want because they *can*. Congress is dysfunctional and unlikely to overrule the Supreme Court, even when the Court's decisions make no sense.

The United States Supreme Court is in the process of losing whatever credibility it once had. This is not to say that the institution has been irreparably compromised, but that this particular Supreme Court will almost certainly be viewed by historians as a largely failed Court that will see many of its decisions overruled by future Courts.

Interpreting Statutes

Indeed, a 6-3 majority of the Supreme Court recently ruled that the language of a statute is largely immaterial when interpreting the statute. In *King v. Burwell*, the Supreme Court interpreted one particular provision of the Affordable Care Act. Tax credits were authorized by Congress to be given to those who purchased insurance through "an Exchange established by the State. …" The meaning of this phrase is undeniably clear to anyone and everyone who prefers intellectual honesty to legal gymnastics that justify a predetermined point of view.

The intent of Congress was to offer a carrot to the states to set up their own exchanges. Most states did not set up exchanges. The Internal Revenue Service, however, allowed tax credits for individuals who bought insurance on the federal exchange. Chief Justice Roberts explained that the intent of Congress should be analyzed by considering the entirety of the more than 2,000 pages of the ACA. The intent of Congress overrides clear, direct and unambiguous

statements. Thus, *King v. Burwell* seems to stand for the proposition that the language of the statute really doesn't matter.

This is hardly the only example of the Supreme Court reaching an unsupportable decision. In *Indiana State Police Pension Trust v. Chrysler LLC*, the Court allowed secured creditors to take a back seat in bankruptcy to unsecured creditors, which flies in the face of both bankruptcy and commercial law. In *Kelo v. New London*, the Supreme Court ruled that a municipality could seize real estate from one citizen for the express purpose of handing it over to a non-governmental, private entity, if it is believed that that particular private entity will make better use of the property. How can one take the Court seriously if it is going to ignore plain statutory language and allow eminent domain to be expanded to a point where there are no viable remaining boundaries?

The act of the Supreme Court doing whatever it wants without repercussions or consequences is not new. Indeed, those who oppose Obamacare and find the Supreme Court ruling in *King v. Burwell* impossible to justify are just now coming to terms with what those in the patent industry have known for years. The Supreme Court does not let the statute stand in the way of reaching the decision it thinks is best. Neither does the Supreme Court allow precedent, even its own precedent, to influence the decision-making process. That is, of course, unless the justices choose to ignore substantive arguments and claim for some reason that in a particular case their hands are tied because of *stare decisis*, which the justices actually did in *Kimble v. Marvel Entertainment.* Given this Court's track record, it is practically comical to see it cite *stare decisis*.

If the justices understood patent law, they would know that pharmaceuticals are patented specifically because of the discovery made.

Arbitrary Decisions

To call many of the decisions of this Supreme Court arbitrary and capricious would be insulting to any decision that is merely arbitrary and capricious. In *AMP v. Myriad*, the Supreme Court held that the patent claims at issue covered a non-naturally occurring DNA segment, but were nevertheless patent ineligible under the "law of nature" doctrine. Indeed, Justice Thomas wrote: "We hold that a naturally occurring DNA segment is a product of nature and not patent eligible merely because it has been isolated."

Apparently, not realizing the logical incongruity, Thomas later explained that *Myriad*'s claims could not be saved "by the fact that isolating DNA from the human genome severs chemical bonds and thereby creates a non-naturally occurring molecule." Thus, the isolated DNA claims somehow simultaneously cover naturally occurring DNA, even though isolating DNA "creates a non-naturally occurring molecule."

Further still, in *Myriad*, Justice Thomas explained that discoveries are not patent eligible. The problem with this sweeping statement is that it is incorrect. If the Court took the time to read the one-sentence statute—35 U.S.C. 101—the justices would have learned that discoveries are patent eligible. Moreover, if the justices understood patent law, they would know that pharmaceuticals are patented specifically because of the discovery made. It is a slight exaggeration to say that once the lead compound for a drug is determined, the drug invents itself, but only a slight one. As the pharmaceutical industry turns increasingly to computer-assisted identification of lead compounds, *Myriad*, in conjunction with *KSR v. Teleflex*, means that pharmaceuticals are not patent eligible, and if they are patent eligible, they are obvious.

How many people expect the Supreme Court to rule that way, which in turn, would deliver a deathblow to the pharmaceutical industry? The problem is that the Supreme Court has become a "super legislative" body. It ignores the laws it doesn't like, re-writes the laws it likes, and decide cases on policy rationales. The decisions are then written to explain what the justices have determined they will do, rather than independently analyzing cases under the law and letting the law and facts dictate the outcome.

Ignoring Statutes

But it gets worse. In *Mayo v. Prometheus*, the Supreme Court substantively ignored the mandates of the Patent Act and expanded the patent eligibility inquiry under 35 U.S.C. 101 to swallow the novelty inquiry set forth in 35 U.S.C. 102, the obviousness inquiry set forth in 35 U.S.C. 103 and the description requirement set forth in 35 U.S.C. 112. The Department of Justice specifically pointed out to the Supreme Court that it shouldn't make 101 the single inquiry because that violated the statute. Justice Breyer responded in his opinion writing that the Supreme Court must "decline the Government's invitation to substitute §§102, 103, and 112 inquiries for the better established inquiry under §101."

Decline the invitation? It isn't an invitation. The statute requires consideration of each of the individual sections and generations of prior Supreme Court precedent specifically prohibiting conflating the various sections of the statute. But as is typical, the Supreme Court didn't overrule those prior precedents that mandated a wholly different analytical framework; it merely ignored them because it could.

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Patent Reform Fuels Fear *(cont. from page 35)*

prospective licensees are saying "no thank you," and existing licensees are seeking to renegotiate for a substantially lower royalty payment, backed by a threat of challenging key patents in inter partes review at the United States Patent and Trademark Office. Remington, who has long represented the Wisconsin Alumni Research Foundation, knows the drill all too well. WARF is the entity that holds the patents on behalf of the University of Wisconsin.

"Now, very knowledgeable people say that in the current environment to enforce a portfolio of patents the owner…needs to have a cash war chest of at least $30 million and they need to have a market capitalization, if they're a private business, of over a billion dollars," Michel explained. "Patent litigation today has become a sport of kinds, only the super rich can really afford."

Patent Deals Go to Europe

Brad Olson, a partner at Barnes and Thornburg with more than 20 years of patent litigation experience, wholeheartedly agrees with Michel. Olson pointed out that money has historically been made through licensing, not litigation. The breakdown of the licensing economy leads to a greater number of disputes, which is good news for attorneys, if they have clients who are willing to pay for them to fight.

"Licensing is an arms-length transaction that shifts patent rights and quiets disputes long before they ever originate," Olson said. "Licensing itself has really diminished, and that is unfortunate, because agreements aren't being made, money is not changing hands the way it should, and a potential irritation that may erupt into a dispute is certainly there."

The fact that money is not changing hands is particularly problematic for the U.S. economy. Olson, who represents a number of European clients, has been advising them that, given the uncertainty and lack of a coherent, predictable set of patent laws, it is better to shift the settlement of disputes and reach licensing agreements outside the United States, particularly in Germany, which provides a more certain forum with far greater speed than is available in the United States.

"The economic opportunities over there are almost, or are, better than they are in the United States in many areas," Olson explained. "Things are not normal here, not predictable; there are too many moving pieces. Let's avoid the United States for a while." In fact, Olson has advised clients to engage in "money changing in Europe." Obviously, the move to push licensing overseas is not a positive development for the United States economy, which still hasn't been able to fully shrug the effects of the Great Recession.

Sadly, there are those who mistakenly believe that the United States is better off as the licensing market dries up. Such a misguided perspective is driven by the myopic viewpoint that the licensing of patent rights is a zero sum game in which the license fee is a cost or tax on innovation. Those who hold these views are hardly familiar with basic economic principles. The acquisition of rights is not a cost. To characterize a licensing payment as a cost is simply incorrect in economic terms and completely ignores the transfer of rights obtained by the licensee.

> **"Patent litigation today has become a sport of kinds, only the super rich can really afford."**
>
> — FORMER CHIEF JUDGE PAUL MICHEL

Furthermore, without a thriving marketplace for the exchange of patent rights, we will see far less innovation, not greater innovation, as the critics claim. This truism should be self evident, but it is likely necessary to state the obvious. Innovation overwhelmingly occurs at the hands of individuals, small businesses, startups and universities. Innovation occurs when courageous risk-takers ask "what if" and chase solutions accordingly.

Commoditization versus Innovation

Inventing is a business model very different from a commoditization model employed by those companies that demand a weakening of patent rights.

The tech companies that want more patent reform use technology—they do not innovate technology. This is obvious in the definition of "innovation," which focuses on new products, but the fact that a product is new to you does not make it new in fact. Innovation requires a uniqueness, and those who copy simply do not innovate. Instead, those who copy take the innovation of others.

In the past, those that became too large to innovate acquired technology through acquisition, licenses or cross licenses. Today, technology is acquired primarily as the result of efficient infringement, which isn't an "acquisition" at all. Technology rights are simply ignored with the technology embedded into the products sold, despite the existence of what is ostensibly an exclusive right—a patent.

Without the risk-taking entities that focus almost exclusively on R&D, net innovation will unquestionably decrease. Again, it should be self evident, but if an individual or company cannot make money from R&D because any rights obtained will simply be ignored, that individual or company cannot engage in R&D. It is that simple.

"So this is a very unfortunate circumstance," Michel explained. "Historically patents have played an even bigger role for newer, smaller entities than for giant market incumbents, because a giant market incumbent has all sorts of advantages of size and wealth and revenue stream and distribution channels and brand reputation and…market share, so patents are somewhat less important to them."

It is hardly a surprise that large tech companies that struggle to innovate would want a weaker patent system and a collapse of the patent licensing market. There are some in Congress who understand the critical role that risk-taking small entities play. With every draft, the pending patent reform bills continue to get better from the perspective of the patent holder.

Hopefully, that trend will continue. Of course, it would be preferable if the pending bills were scrapped in favor of far more targeted reforms that laser focus on the relatively small number of patent owners who engage in abusive practices.

The Supreme Court Is Ruining the U.S. Economy
(cont. from page 41)

"Abstract Ideas" Not Defined

In *Alice v. CLS Bank*, the Supreme Court issued another intellectually challenged unanimous decision. Authored by Justice Thomas, the Court held that because the claims are drawn to a patent-ineligible abstract idea, they are not eligible for a patent under Section 101. The problem, however, is that the Supreme Court has never defined the term abstract idea. Furthermore, not once in the decision did the Supreme Court use the word "software," although the patent in question was undeniably a software patent, and the Court's decision has been used at the USPTO, PTAB, in Federal District Courts and at the Federal Circuit to either deny issuance of software patents or declare previously issued software patent claims invalid, because the subject matter is patent ineligible. Everyone in the industry knew this decision would have a major impact on software patents, and the Supreme Court didn't use the term once?

Even this session, the Court's decisions in *Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc.* and in *Commil USA, LLC v. Cisco Systems, Inc.* cause one to raise an eyebrow. In *Teva*, for example, the Supreme Court explained that the Federal Circuit must give deference to findings of fact made by the district court when interpreting claims, but refused to acknowledge that there are important questions of fact that must be addressed, even when making a decision on purely intrinsic evidence.

In *Commil*, the Supreme Court inexplicably raised the issue of patent trolls, when they explained they were mindful of the problems with abusive litigation. The problem, however, is that neither party was a patent troll and there was not even a hint of abusive litigation tactics being employed. Further, the Supreme Court continued to discuss patents being invalid, but it is impossible for an entire patent to be invalid—only a patent claim can be invalidated—not the entire patent. Even when the Supreme Court reaches what most would view as an objectively sound decision, it raises serious concerns about whether the justices understand patent law well enough to be handling cases of such importance.

Inventor Groups

Inventors Digest only publishes the names and contacts of inventor groups certified with the United Inventors Association. To have your group listed, visit www.uiausa.org and become a UIA member.

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www.michiganinventors
coalition.org

Muskegon Inventors Network
John Finkler, president
P.O. Box 0441
Muskegon, MI 49440
(231) 719-1290
www.muskegoninventors
network.org

West Shore Inventor Network
Crystal Young, director
West Shore Community College
3000 N. Stiles Road
Scottville, MI 49454
(231) 843-5731
cyoung2@westshore.edu
www.wininventors.com

Minnesota

Inventors' Network
(Minneapolis/St.Paul)
Todd Wandersee
4028 Tonkawood Road
Mannetonka, MN 55345
(612) 353-9669
www.inventorsnetwork.org

Minnesota Inventors Congress
Deb Hess, executive director
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Redwood Falls MN 56283
(507) 627.2344
(800) 468.3681
info@minnesotainventors
congress.org
www.minnesotainventors
congress.org

Missouri

Inventors Association of St. Louis
Gary Kellmann, president
13321 N. Outer 40 Road, Ste. 100
Town & Country, MO 63017
www.InventSTL.org
info@InventSTL.org

Inventors Center of Kansas City
Curt McMillan, president
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Kansas City, MO 64141
(913) 322-1895
www.inventorscenterofkc.org
info@theickc.org

Southwest Missouri Inventors Network
Springfield Missouri
Jan & Gaylen Healzer
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Nixa, Mo 65714
(417) 827-4498
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Mississippi

Mississippi SBDC Inventor Assistance
122 Jeanette Phillips Drive
University, MS 38677
(662) 915-5001
(800) 725-7232
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www.mssbdc.org

Nevada

Inventors Society of Southern Nevada
3627 Huerta Drive
Las Vegas, NV 89121
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InventSSN@aol.com

Nevada Inventors Association
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Reno, NV 89510
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info@nevadainventors.org
www.nevadainventors.org

Every effort has been made to list all inventor groups accurately. Please email Carrie Boyd at cboyd33@carolina.rr.com if any changes need to be made to your group's listing.

New Jersey

National Society of Inventors
Stephen Shaw
8 Eiker Road
Cranbury, NJ 08512
Phone: (609) 799-4574
(Meets in Roselle Park, NJ)
www.nsinventors.com

Jersey Shore Inventors Group
Bill Hincher, president
24 E. 3rd St.
Howell, NJ 07731
(732) 407-8885
ideasbiz@aol.com

New Mexico

The Next Big Idea: Festival of Discovery, Invention and Innovation
Los Alamos Main St.
109 Central Park Square
Los Alamos, NM 87544
(505) 661-4844
www.nextbigideaLA.com

New York

The Inventors Association of Manhattan (IAM)
Ananda Singh,
membership manager
Location TBD every 2nd
Monday of the month
New York, NY
www.manhattan-inventors.org
manhattan.inventors@gmail.com

Inventors Society of Western New York
Alan Reinnagel
174 High Stone Circle
Pitsford, NY 14534
(585) 943-7320
www.inventny.org

Inventors & Entrepreneurs of Suffolk County, Inc.
Brian Fried
P.O. Box 672
Melville, NY 11747
(631) 415-5013

Long Island Forum for Technology, Inc.
111 W. Main St.
Bay Shore, NY 11706
(631) 969-3700
LCarter@lift.org

NY Society of Professional Inventors
Daniel Weiss
(516) 798-1490 (9AM - 8PM)
dan.weiss.PE@juno.com

North Carolina

Inventors' Network of the Carolinas
Brian James, president
520 Elliot Street, Ste. 300
Charlotte, NC 28202
www.inotc.org
zliftona@aol.com

North Dakota

North Dakota Inventors Congress
2534 S. University Drive, Ste. 4
Fargo, ND 58103
(800) 281-7009
info@neustel.com
www.ndinventors.com

Ohio

Inventors Council of Cincinnati
Jackie Diaz, president
P.O. Box 42103
Cincinnati, Ohio 45242
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Inventorscouncil@
inventcinci.org
www.inventcincy.org

Canton Inventors Association
Frank C. Fleischer
DeHoff Realty
821 South Main St.
North Canton, OH 44720
(330) 499-1262
www.cantoninventors
association.org

Inventors Connection of Greater Cleveland
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Secretary 440-941-6567
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icgc@aol.com
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Inventors Council of Dayton
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www.groups.yahoo.com/group/
inventors_council

Inventors Network
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Columbus, OH 43212-1155
(614) 470-0144
www.inventorscolumbus.com

Youngstown-Warren Inventors Association
100 Federal Plaza East, Ste. 600
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Oklahoma

Oklahoma Inventors Congress
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www.oklahomainventors.com

Oregon

South Coast Inventors Group
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www.southcoastinventors.org

Inventors North West
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#11 Pioneer Lane
Sunriver, OR 97707
Jhunterh2001@yahoo.com
www.inventorsnorthwest.com

Pennsylvania

American Society of Inventors
Jeffrey Dobkin, president
Ruth Gaal, vice-president and
treasurer
P.O. Box 354
Feasterville, PA 19053
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rgaal@asoi.org
www.asoi.org
www.americansocietyof
inventors.com

Pennsylvania Inventors Association
Jerry Gorniak, president
2317 E. 43rd St.
Erie, PA 16510
(814) 825-5820
www.pa-invent.org

Williamsport Inventor's Club
One College Ave., DIF 32
Williamsport, PA 17701
www.wlkiz.com/resources/
inventors-club
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Puerto Rico

Associacion de Inventores de Puerto Rico
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www.inventorespr.com

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Texas

Amarillo Inventors Association
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www.alamoinventors.org

Austin Inventors and Entrepreneurs Association
Lill O'neall Gentry
12500 Amhearst
Austin, TX
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www.austininventors.org

Wisconsin

Inventors & Entrepreneurs Club of Juneau County
Economic Development Corp.
Terry Whipple/Tamrya Oldenhoff
P.O. Box 322
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Camp Douglas, WI 54618
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