MARCH 2017 Volume 33 Issue 03

Peach Baskets? Madness! HOW JAMES NAISMITH INVENTED BASKETBALL

Home Scare Has an Upside JOURNEY OF A SMART STOVE DEVICE

A Machine — an Abstract Idea? PTAB RULING A BLOW TO PATENT ELIGIBILITY

TRADE SHOULD AND GO



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Maybe the Best Kind of Invention



If you've ever had an invention, chances are you also had a secret.

For most people, an invention is a way to make money-and there's nothing wrong with that. It's part of the American Dream. But in order to protect that investment, it's often necessary to make sure your plans don't fall into the hands of the wrong people who can steal your idea.

As part of our trade shows package this month, Charlotte-area inventor Lily Winnail talks about the valuable lessons she has gained from these events. Many of the lessons have been of great benefit-even the painful ones, such as the time her product was knocked off by a major retailer.

Any typical inventor who's making prototypes and applying for a patent should be aware that often, his or her product or service will involve proprietary information: secret ingredients, characteristics, processes or production methods that make the invention unique. Part of this magazine's mission each month is to provide information that will help guide you through the inventing process and ensure you are as prepared and protected as possible.

Another part of our mission is to celebrate inventing, even in the nontraditional sense. James Naismith, who invented the sport that will mesmerize millions this month, never had a patent to show for creating the game of basketball; he also never had to pay an attorney, manufacturer or marketer in connection with his idea.

Naismith simply conceived an activity to fill a pressing need-in his case, coming up with a safe athletic competition that schoolboys could play indoors during the brutal New England winters. He didn't worry about the possibility of someone stealing or modifying his invention and profiting from it. In fact, he was surprised that it became popular. He just wanted to contribute to the development and personal growth of the kids he was teaching.

We often use the terms "inventor" and "innovator" interchangeably. That's fine; they're close enough in meaning. Their dictionary definitions indicate the most subtle of distinctions: An inventor is defined as "a person who invented a particular process or device or who invents things as an occupation." An innovator is "a person who introduces new methods, ideas, or products."

James Naismith sounds a little more like an innovator. But he's commonly referred to as an inventor-one whose signature idea remains compelling 126 years after the fact, in large part because he never had to hide anything.

> -Reid (reid.creager@inventorsdigest.com)

INGENUITY IS **AMERICA'S** MOST VALUABLE **RESOURCE.** DON'T TREAT IT LIKE A CHEAP COMMODITY

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

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ON THE COVER A scene from a product display at CES 2017. Photo by CES®

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POMO WAFFLE KIDS SMARTWATCH FOR TEACHING, SAFETY, FUN

pomohouse.com

Customizable and colorful, the POMO WAFFLE is a smart watch meant to help kids understand responsibility, express creativity and develop independence while providing a sense of security for them and parents.

A scheduler informs kids of regular tasks and responsibilities. An exercise tracker has a built-in pedometer that counts every step. Kids can ring trusted phone numbers with the touch of a button. You can add your home and other important destinations so the POMO WAFFLE can provide directions for kids.

Parents and kids can get added peace of mind through a smart locator that shows where kids are in real time, with three positioning technologies for more accuracy. The Safe Zone feature allows parents to set up kids' commonly visited locations (friends' homes, school, park, etc.) and notify them if their children have left those safe areas. Kids can send their parents voice notes.

Most features require enabling the Simcard 2G/3G function. The watch retails for \$189 and has a projected March shipping date.

Uuni Pro QUAD-FUELED OUTDOOR OVEN uk.uuni.net

Billed as the world's first quad-fueled oven—it can be run on wood, charcoal, wood pellets or gas—the Uuni Pro can be used to cook roasts, breads, vegetables, fish and large 16-inch Neapolitan pizzas.

The Uuni builds on the launch four years ago of the original Uuni, the world's first portable wood-fired oven. The Uuni Pro has twice the cooking surface (17.7 by 17.7 inches) of the portable Uuni and the same speed, with temperatures up to 900 degrees Fahrenheit (500 degrees Celsius) in 15 minutes. The Uuni Pro can cook pizzas in 90 seconds.

The relatively light weight (57 lbs.) and dimensions of the oven (29.13 inches long, 19.29 inches wide and 31.1 inches high) make it easy to load into the trunk of a vehicle.

Estimated shipping date is July; retail price will be \$649 in the fall.

Tex—lock TEXTILE-BASED, LIGHTWEIGHT LOCK tex-lock.com

Light but as secure as steel, Tex—lock is made with hightech materials that help protect bicycles and other items from theft.

The lock is flexible, as opposed to standard locks that are rigid and heavy. The rope material resists

theft attempts unlike common steel products that can snap easily when using a bolt cutter. Even the use of ice spray doesn't help thieves, because the colder it gets, the higher the cutting resistance of the fibers.

The rope, eyelets and padlock combined weigh well less than 1kg (2.2 lbs.).

The Tex—lock S (short) will retail for \$105, the M (medium) \$130 and the XL \$140. Shipping is scheduled for August.

"Of all of our inventions for mass communication, pictures still speak the most universally understood language."

-WALT DISNEY

LABFRESH STAIN-REPELLENT COTTON SHIRTS labfresh.eu

LABFRESH is designed to reduce or prevent two of the biggest problems with the wardrobe staple known as the white collared shirt: yellow necklines and wet armpits.

A patented INDUO technology is the key to ensuring that the shirt remains odor repellent, wrinkle resistant and breathable. The shirt's cotton fibers are treated with the technology on a molecular level before being spun into fabric. The treatment blocks all fluids and the bacteria they carry from entering the fabric.

LABFRESH emphasizes being breathable instead of 100 percent waterproof, although it repels "decent" amounts of liquids and dries very fast. The shirt rarely needs ironing.

Shirts are available in regular and slim fits, as well as white and light blue, with the possibility of more options. Stainless ties are also available, made of 50 percent wool and 50 percent silk. Shipping is scheduled for May.

TIME TESTED

A Sport With 2 Peach Baskets? Madness! BY REID CREAGER

HIGH IDEALS SPURRED JAMES NAISMITH'S INVENTION OF BASKETBALL

James Naismith's invention met a pressing need.

Kansas University national champion basketball team, 1922-1923. Top left: Adolph Rupp. Middle row, second and third from left: renowned basketball coach Phog Allen and James Naismith. **he sporting event** that transfixes millions of Americans every March is the result of a game invented by a native Canadian who preferred wrestling and gymnastics.

James Naismith would probably be surprised by the popularity of the NCAA men's basketball tournament long known as March Madness, or that the championship game attracted nearly 18 million viewers last year. He certainly could not have foreseen that journalists would be writing about the sport just a year after he invented "basket ball" in 1891.

The physical education instructor at the YMCA in Springfield, Massachusetts, Naismith was tasked with conceiving a safe and healthful exercise that could take place indoors during the Northeast's often brutal winters. His idea: two teams of nine players apiece who tried to throw a soccer ball into two peach baskets nailed to a 10-foot elevated track. On Dec. 21, 1891, he pinned its 13 basic rules outside the gymnasium, with a heavy emphasis on safety and sportsmanship (five of the rules mention fouls).

"Basketball doesn't build character; it reveals it," Naismith said. "Be strong in body, clean in mind, lofty in ideals."

Those enduring principles and the rules' eternal impact on the game were dramatically illustrated in 2010, when University of Kansas alumnus David Booth paid \$4.3 million for the original rules in an auction conducted by Sotheby's in New York City. The rules, sold by the Naismith International Basketball Foundation, surpassed the \$3.7 million figure at the same auction for a copy of the Emancipation Proclamation that was signed by Abraham Lincoln and purchased by Robert Kennedy.

NAISMITH'S ORIGINAL 13 BASKETBALL RULES

Many of James Naismith's basic rules still apply. Updates or changes are noted by the National Basketball Association.

> The ball may be thrown in any direction with one or both hands. **Update:** Once the ball has crossed midcourt, it cannot be passed behind the midcourt line unless touched by a defensive player first.

The ball may be batted in any direction with one or both hands (never with the fist). **Update:** There is no penalty for using one's fist to hit the ball.

3 A player cannot run with the ball. The player must throw it from the spot on which he catches it, allowance to be made for a man who catches the ball when running at a good speed if he tries to stop. (This still applies—though many critics claim referees long ago became lax on traveling violations, especially on dunks.)

The ball must be held in or between the hands; the arms or body must not be used for holding it. **Update:** The ball can only be held in the hands or the arms of a player.

5 No shouldering, holding, pushing, tripping, or striking in any way the person of an opponent shall be allowed; the first infringement of this rule by any player shall count as a foul, the second shall disqualify him until the next goal is made, or, if there was evident intent to injure the person, for the whole of the game, no substitute allowed. **Update:** A flagrant foul is unnecessary or excessive contact against an opponent that results in two shots and possession of the ball.

6 A foul is striking at the ball with the fist, violation of Rules 3,4, and such as described in Rule 5. **Update:** No longer applies.

T if either side makes three consecutive fouls, it shall count a goal for the opponents (consecutive means without the opponents in the mean time making a foul). **Update:** No longer applies.

(Continued on page 10)

Naismith's original basketball rules had a strong emphasis on safety and sportsmanship.

First game a 'free-for-all'

Orphaned at age 9 and raised by his uncle, Naismith was active in football, soccer, lacrosse, rugby and gymnastics at McGill University in Montreal. He served as director of athletics there and earned a bachelor's degree in physical education.

First digt of the add that rules they in the gy in the toy

Baskel. Ball

Naismith was 28 when he went to teach at YMCA International Training College in Springfield. In the winter of 1891, "We had a real New England blizzard," Naismith said in a 1939 radio broadcast discovered by the University of Kansas, where he established the first basketball program. "For days, the students couldn't go outdoors so they began roughhousing in the halls. We tried everything to keep them quiet. We tried playing a modified form of football in the gymnasium, but they got bored with that. Something had to be done.

"One day, I had an idea. I called the boys to the gym, divided them up into teams of nine and gave them an old soccer ball. I showed them two peach baskets I had nailed up at each end of the gym, and I told them the idea was to throw the ball into the opposing team's

TIME TESTED

NAISMITH'S ORIGINAL 13 BASKETBALL RULES

A goal shall be made when the ball is thrown or batted from the grounds into the basket and stays there, providing those defending the goal do not touch or disturb the goal. If the ball rests on the edges, and the opponent moves the basket, it shall count as a goal. **Update:** Because there is now a hole at the bottom of the goal, this no longer applies. But touching the ball while it's on the rim is a violation.

When the ball goes out of bounds, it shall be thrown into the field of play by the person first touching it. In case of a dispute, the umpire shall throw it straight into the field. The thrower-in is allowed five seconds; if he holds it longer, it shall go to the opponent. If any side persists in delaying the game, the umpire shall call a foul on that side. **Update:** Only a player can throw a ball into the field. The five-second rule still applies.

10 The umpire shall be judge of the men and shall note the fouls and notify the referee when three consecutive fouls have been made. He shall have power to disqualify men according to Rule 5. **Update:** In the NBA, there are now three referees in a game.

The referee shall be judge of the ball and shall decide when the ball is in play, in bounds, to which side it belongs, and shall keep the time. He shall decide when a goal has been made, and keep account of the goals with any other duties that are usually performed by a referee. **Update:** There are now separate timekeepers who monitor the game clock and check substitute players into a game. A scorekeeper keeps the statistics of a game such as the score, individual statistics and fouls.

12 The time shall be two 15-minute halves, with five minutes' rest between. **Update:** NBA games consist of two halves with four 12-minute quarters, with a 15-minute break at halftime. NCAA games have two 20-minute halves.

13 The side making the most goals in that time shall be declared the winner. In case of a draw, the game may, by agreement of the captains, be continued until another goal is made. **Update:** The team with the most points at the end of the game is declared the winner. "The invention of basketball was not an accident. It was developed to meet a need. Those boys simply would not play 'Drop the Handkerchief."

peach basket. I blew a whistle, and the first game of basketball began."

Naismith quickly learned that this wasn't the game he had in mind. There weren't enough rules. "That's where I made my big mistake," he said. "The boys began tackling, kicking and punching in the clinches. They ended up in a free-for-all in the middle of the gym floor. Before I could pull them apart, one boy was knocked out, several of them with black eyes, and one had a dislocated shoulder. It certainly was murder.

"Well, after that first match, I was afraid they'd kill each other. But they kept nagging me to let them play again, so I made up some more rules (the 13 that are now famous). The most important one was that there should be no running with the ball. That stopped tack-

The basketball

from the goldmedal game in

the1936 Berlin

Olympics looks

a lot like today's volleyball.

ling and slugging. We tried out the game with those rules and we didn't have one casualty. We had a fine, clean sport. Ten years later, basketball was being played all over the country."

> Though Naismith is universally known as the inventor of basketball, his breakthrough wasn't an invention in the formal sense because his idea for the game has no patent (U.S. Patent 1,718,305 was granted to G.L. Pierce on June 25, 1929 for the basketball used in the game). But his creation



Left: Naismith and his daughter, Maude L. Naismith Dawe, hold the Maude Naismith Trophy that honors the winner of the NCAA basketball championship. Naismith left a provision in his will that the award be named for his late wife.

Above: Naismith plays with his grandchildren.

fit the classic invention model to a T: He identified a need, conceived a plan, provided the basic elements, and made the necessary refinements. "The invention of basketball was not an accident," the quotable Naismith said. "It was developed to meet a need. Those boys simply would not play 'Drop the Handkerchief."

Huge two-sport impact

It may not be a stretch to say that Naismith had more of an impact on both basketball and football than anyone. In addition to being the unquestioned inventor of basketball, he is also credited with designing the first football helmet.

But he will forever be most associated with basketball. At the 1936 Summer Olympic Games, three years before Naismith died, basketball was included in the competition for the first time. Naismith went to Berlin to present medals to the winning teams of the three North American countries: the United States (gold), Canada (silver) and Mexico (bronze). He was named honorary president of the International Basketball Federation.

"And the whole thing started with a couple of peach baskets I put up in a little gym 48 years ago," he said in the broadcast interview 10 months before his passing. "I guess it just goes to show what you can do if you have to." $\widehat{\mathbf{v}}$

INVENTOR ARCHIVES: March

MARCH 3, 1821

Thomas Jennings became the first African-American inventor to receive a U.S. patent, for his "dry scouring of clothes" or dry-cleaning. Jennings, a free man who was a New York clothier and tailor, became very wealthy and used most of his money to support abolitionist activities in the Northeast. In 1831, he became the assistant secretary for the First Annual Convention of the People of Color in Philadelphia.



MARCH 2, 1861

The Patent Act of 1861 increased the term of a patent grant from 14 years to 17, a duration that stood for 134 years. In 1995, stipulations were amended to state that for applications filed on or after June 8, 1995, the patent term is 20 years from the filing date of the earliest U.S. or international application to which priority is claimed, excluding provisional applications.

MARCH 7, 1876

Alexander Graham Bell was granted U.S. Patent 174,465—Improvement on Telegraphy. Though he received the first patent for a telephone, there is strong evidence that Bell did not invent the device

despite widespread assumptions to the contrary. The U.S. House of Representatives approved a declaration in 2002 acknowledging Italian immigrant Antonio Meucci's role in the invention.

Alexander Graham Bell

Antonio Meucci

MARCH 6, 1899

Felix Hoffmann, a German chemist looking to relieve his father's arthritis pain, patented a stable form of acetylsalicylic acid called Aspirin. He discovered that the compound salicin, found in willow plants, provided pain relief.





MARCH 5, 1963

Arthur K. Melin received a patent for a Hoop Toy, years after the hula hoop had been a 1950s fad. The hula hoop's origins date to the days of ancient Greece and Egypt.

Seeking a Licensee? Think Trade Shows

IT'S THE BEST PLACE TO MEET COMPANY EXECUTIVES, AMONG OTHER BENEFITS **by jack lander**

here is no more productive way to find the right licensee for your patent than by meeting the presidents or vice presidents of appropriate companies. And there is no better place to meet them face-to-face than at a trade show. Here's why:

- The president and vice president of marketing are often the only bold risk-takers in the company. The closer you get to the bottom rung of the marketing hierarchy, the greater your odds of rejection. Rejection is safe. Licensing is risky.
- The president and vice president of marketing are under pressure to develop new products to replace products that are due to be phased out. That pressure isn't always felt in the subordinate ranks.
- The president and vice president of marketing have a long-range perspective of the company's market. A product that doesn't fit neatly into the company's current product line may turn out to be just what it is looking for.
- Even if the president or vice president delegates the evaluation or your invention to a subordinate, that is far more effective than having it come in through the mail to the same person.

One of the pleasant surprises at trade shows is the availability of top executives. They are typically standing in their booth talking to a potential customer. We are free to walk in, wait our turn, and have their attention. No "gatekeepers" screen you and tell you the boss is in a meeting, as often will happen if we attempt to see them at their offices. And there's no rerouting us to the director of research and development. The top fellows are surprisingly human.

My first experience with trade shows was at McCormick Place in Chicago. I had gone to the American Booksellers Association show to try to find a publisher for a book I had written. My reasoning was that publishers would be there pitching their books, and I'd be able to pitch my galley copy to them. (A galley is a book's prototype.) That was a bit presumptuous, but darned if it didn't work. I was walking the aisles and came upon Enterprise Publishing Company's booth. I was surprised to see Ted Nicholas, Enterprise's CEO, standing alone and waiting to do business.

I had known about him for some time and had even used his book about writing and publishing in the process of writing my own. Ted was earning a fortune on his

STEPS TO LICENSE YOUR INVENTION'S PATENT OR PATENT APPLICATION

1. Decide the kind of trade show that will have appropriate manufacturers present.

2. Search the internet, and make a list of those shows.

3. Phone or e-mail the show's management and ask how to qualify to attend, and if there is a charge for non-displayers. Many trade shows discourage walk-ins who are not legitimate buyers. Some will want only a

business card. Others will demand proof—such as your business license that you really are in business, and a potential buyer of the wares that will be shown.

4. Ask the show's sales office for a list of companies that will have booths at the show. If this upcoming show's list is not yet available, ask for last year's show's list.

5. Research those attending companies

that have a product line into which your invention appears to fit. Go to their websites. Call for an annual report, which often indicates the direction in which their product lines are headed. If their products are on display at a retail outlet, check them out.

6. Call the company and ask if it has a "new-product submission policy." Most big companies will not even read an unsolicited new-product proposal until we sign an agreement to the effect that our only rights are those granted by our patent. That sounds scary at first, but in the end, that's how it will work out in any case.

7. Sign it. Make several copies. Some of the executives you meet will refuse to talk to you about a new product due to the company's liability. That's when you hand him a copy of the agreement you book, "How to Form Your Own Corporation for Under \$50 Without a Lawyer." I had imitated his long title for my own book, "How to Get Hired Faster, For More Money, Whether You Are Presently Working or Not." We talked for at least 10 minutes; he asked for an autographed copy of my manuscript. A few days later, he phoned me and offered me a tentative deal. But after a thorough analysis of competing books, Ted sadly rejected mine. However, he asked me if I would write a book on another subject for Enterprise. I did, of course, and "Make Money by Moonlighting" was published in 1982.

Buoyed by my success, I wrote "How to Finance Your Invention," a book for inventors, and again went to McCormick Place to find the acquisitions executives of Nolo and Ten Speed Press. I spoke with each of these executives, gave them a copy of my galley copy, and waited ... and waited. Finally, Nolo said it wanted to publish it and sent me a royalty advance of \$10,000. A week later, Ten Speed called me and said it wanted it. Nolo published it as "All I Need is Money." Well, that was in 2005. These days, you can buy a good used copy at Amazon.com for a penny plus \$3.99. Books aren't invention in the usual sense, of course. But they are a novel product, and the trade show experience is the same whether you're trying to license a book or a new kitchen tool. I have since advised a number of inventors who have found prospective licensees at trade shows and negotiated royalty deals.

Licensing your patent involves a planned approach and lots of work. But the alternatives are also lots of work, and usually come to nothing. Good luck. And let me know of your success. \heartsuit

Jack Lander, a near legend in the inventing community, has been writing for *Inventors Digest* for 20 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.

signed with his company prior to coming to the show.

AWPIXEL.COM/SHUTTERSTOCK

8. Prepare a professional sell-sheet. The sell-sheet should be pitched to users of your "product," not to the licensee. Potential licensees want to hear why their customers will want to purchase the product. Sell them on that idea, and they automatically know why they should want to license it. **9. Attend** the shows you have selected as a walk-in, not a booth taker. You need to be free to walk the show, have plenty of time to meet potential licensees, and to hand out sellsheets. But be on guard against letting your sellsheet fall into the hands of competitors.

10. Be considerate of

your prospect's time. Be brief. Hold your tongue. Let your sell-sheet do the selling. Remember, you are an amateur when it comes to selling your invention.

I've witnessed inventors brag about how they got the idea for the invention, how it will make a fortune because all of their friends are sure it will, etc., etc. Boring and dumb! There is no more effective way to turn off a company executive than to waste his or her time with trivialities. Again, let your sellsheet do the selling. **11. Introduce** yourself, state that you have a new product that you think the company will benefit from, and that all of the important information is in the sell-sheet. Give the executive two or three copies so that he or she can pass out the others to people who will be in on the decision to license.

12. Ask for a business card so that you can follow through a few days

after the show. Most of the time when you phone, you'll be talking to an assistant, not to the person you met at the show. Just say something like, "I met Mr. Smith at the trade show a few days ago, and I'm following up on the licensing prospect." Administrative assistants are not the enemy. I've had excellent results by enlisting their help when it becomes clear that I won't get through to talk to Mr. Smith.

Wine Glass Innovator Savors Taste of Success

ROMANIAN DESIGNER GETS PRODUCTION HELP FROM ESPRIT CAM SOFTWARE **by dorin dascalu and hélène horent**

Ramona Enache came up with her invention while outdoors with friends. amona Enache is an architect, but she never imagined she would conceive an important design concept while sipping wine outdoors. "It all started while I was enjoying a glass of wine with friends, in one of the beautiful parks of Amsterdam," said the Romania-born Enache, who now lives in Berlin. "I dislike drinking wine from plastic cups, almost as much as I dislike drinking wine straight from the bottle. This is why I almost always carried real wine glasses along.

"But they are not very stable, so after spilling wine several times in the grass, I realized I needed a glass that I could pin in the ground. Next day when I woke up I still thought it was a

to make it." The Pointer wine glass, designed by Enache, is basically a stylish wine glass with the glass leg replaced by a stainless steel pin. She produced about

good idea, and I decided

200 prototypes by hand and got a very positive response from friends and colleagues, so she created a crowdfunding campaign on Kickstarter to raise the funds needed to go into production.

Key help with production

After reaching her goal of 15,000 Euros (about \$16,000 in U.S. dollars), Enache worked with Logicad, a company in Piatra Neamt, Romania, to create a detailed design and determine the best way to produce the metal parts. Logicad is the Romanian representative for ESPRIT, a high-performance, full-spectrum, computer-aided manufacturing programming system for milling, turning, wire EDM and multi-tasking machine tools. ESPRIT is the flagship product of DP Technology, which has world headquarters in Camarillo, California.

Logicad created models and simulations to precisely define the geometry of her design concept, then 3D-printed prototypes so their style, functionality and manufacturability could be evaluated. It was determined that the metal stems should be manufactured on a CNC machine from steel bars as two modular parts that are later manually polished to obtain a smooth surface and assembled together.

The parts are made from stainless steel because they are to be used outdoors. Both of the parts that make up the stem have nonuniform, contoured surfaces, thin walls and overhangs. The parts are harder to make than it would seem; their sharp ends and tough material make it difficult to avoid vibrations, which would damage their appearance.

Enache and Logicad evaluated several suppliers and selected a Romanian contract manufacturer, Hermi Construct, which specializes in CNC machining with Okuma machine tools. The decision was made to produce the metal parts on an Okuma Multus multitasking machine, which performs milling and turning operations so it can produce the metal parts in a single setup. This machine is also very stable, so it can maintain a good surface finish.

Full-service software

ESPRIT software was used to define all of the machining operations, tools and working conditions on the machine. ESPRIT also provides a library of machine tool builder-certified post processors enriched with valuable feedback, observations and recommendations to get the best performance in any machining process; offers excellent technical support; and the ESPRIT web platform provides the ability to interact and collaborate with other ESPRIT users. Parts that make up the stem have nonuniform, contoured surfaces, thin walls and overhangs. The parts are harder to make than it would seem; their sharp ends and tough material make it difficult to avoid vibrations, which would damage their appearance.

The parts were programmed by one of Logicad's engineers, Cristian Toader, in less than an hour. Toader used ESPRIT's simulation system to view the machining operations on his computer and estimate the machining time and production costs. The first parts produced with the program looked beautiful and met all dimensional requirements.

Only 18 months after Enache conceived her invention, she had produced and sold more than 1,500 glasses for customers in 22 countries. She has received requests for customizing and producing accessories for the glasses; the ones that involved metal parts were quickly accommodated by Logicad programmers. In September 2015, Pointer was awarded a Red Dot Concept Design honorable mention award in Singapore. "Pointer is the perfect tool to take along when you go for a picnic, to the beach or when you simply want to lie in the grass in the garden or in the park, sharing a bottle of wine with your friends or family," Enache said. "It clearly stands out from other products in the same category as a delicate yet robust gadget most people would like to own and use." Θ

POINTER

Details: tothepointer.com, espritcam.com

Dorin Dascalu is the manager of Logicad Solutions srl, an industrial design company based in Piatra Neamt, Romania that provides CAD/CAM, Rapid Prototyping and 3D Printing/ Scanning services, software and solutions. **Hélène Horent** is the operational marketing manager of DP Technology Europe, based in Montpellier, France. She is part of the ESPRIT CAM software development team and responsible for overseeing marketing efforts for ESPRIT in Europe. On the Pointer wine glass, the glass leg is replaced by a stainless steel pin. FDYN

A Smart System Keeps Growing

GARDEN WATERING PRODUCT A BOON FOR PLANTS AND CONSERVATION BY JEREMY LOSAW

ason Aramburu was working in East Africa when he came up with his idea for gardens of Edyn. While studying soil additives for the first company he founded, re:char—on a project that was funded by the Bill and Melinda Gates Foundation—he needed a way to accurately monitor the moisture of the soil on the vegetable farms where he worked.

> He looked into commercially available moisture monitors but was not satisfied with the results. "They were really expensive and didn't really meet our needs," recalls Aramburu, who holds a degree in ecology and evolutionary biology from Princeton University. "That is what inspired me to develop our own."

Also realizing that gardens are consistently overwatered or underwatered, he created the Edyn garden monitor and smart watering system to keep plants growing their best while helping to conserve water.

The system consists of a sensor unit and a smart water valve. The sensor is inserted into the soil and measures the moisture and nutrients in the bed, as well as the humidity and the light level. The sensor sends data to a smart phone and can be used as a standalone device to monitor garden conditions. The app can even suggest plants that grow optimally in your conditions.

The system consists of a sensor unit and a smart water valve.

EDYN

EDYN

When paired with the smart valve, the sensor can trigger watering based on soil moisture to keep a garden properly hydrated without wasting water. Both the sensor and the valve have solar panels to charge the batteries inside each unit, so there is no worry about losing the charge.

Building prototypes

With help from his experience in programming, Aramburu built the first prototype moisture sensor while he was still in East Africa with an Arduino (an open-source electronics prototyping platform based on easy-to-use hardware and software), copper tubing and sheets of plastic. He did not have an app yet, so he uploaded data from the sensor to a website and was able to collect the data he needed.

When his project in East Africa ended, he continued working on Edyn stateside. He filed a provisional patent for the technology while continuing development of the sensor.

Based on lessons learned from starting Re:Char, Aramburu knew he had to build a great team to develop the best product. He partnered with the design firm fuseproject, led by award-winning industrial designer Yves Behar. Fuseproject invested in the idea and worked with Aramburu to design and prototype the device.

In just a few months, they had better prototypes and started testing with gardeners in the San Francisco area. The smart valve add-on was conceived during this testing. "We realized that irrigation automation was important to (consumers). Data alone was not sufficient," Aramburu says. So the valve and sensor were developed

in tandem to be a full system.

Realizing that gardens are consistently overwatered or underwatered, Jason Aramburu created the Edyn garden monitor and smart watering system to keep plants growing their best while helping to conserve water.

Kickstarter boost

Development continued at breakneck speed. In roughly six months, the system had an iconic design and solar power that would keep the units functioning for 30 days without light. The units were outfitted with Wi-Fi connectivity to transmit data from the sensor for long distances, and an app was built to display the data.

The Edyn system was launched to the world on Kickstarter in 2014, and the campaign finished with \$384,201 and 2,336 backers. Although the funds were a boost, Arambulu was more concerned about getting user feedback. He used the campaign as a type of beta test to see how users would react to the technology and which features they would like. Based on feedback from the campaign, the app was enhanced significantly.

Arambulu aggregated a group of PhD scientists to build a proprietary database for matching plants to the conditions of the end-users' gardens. The Kickstarter campaign also caught the interest of big-box retailer Home Depot, which showed interest in purchasing the product for sale in their stores. The purchase orders also provided a financial boost to the company, as well as a clear path to a retail setting.

The next step was getting a manufacturing partner. Arambulu was interested in manufacturing in the states but was concerned about costs. He turned his attention to overseas vendors and did most of the sourcing research on his own. It was a challenge to find a factory that had the capabilities to complete the task while still being small enough for Edyn to be a priority customer. After narrowing the field to a short list, he traveled to each of the factories for an audit. The research has paid off, as there have been no major issues in production quality or delivery with his Chinese vendor.

Enthusiasm and distribution for Edyn continue to grow. The system is now also available on Amazon and Gardener Supply. Edyn was even installed in the organic gardens at the Googleplex in Mountain View, California, to control the watering for its farm-to-table program.

The app continues to get periodic updates to make it more user friendly and smart. Arambulu is also adding integration to smart home platforms starting with IFTTT, one of the biggest smart home platforms. Edyn's added convenience and water savings may make it the next must-have item for serious and novice gardeners. €

Details: Edyn.com

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





The sensor (above) measures moisture and nutrients in the bed, as well as the humidity and light level. Both the smart water valve (below) and the sensor have solar panels to charge the batteries inside each unit.



Creating Options for New Moms

NURSING APPAREL OFFERS COMFORT AND STYLE BY EDITH G. TOLCHIN

or years, nursing apparel consisted of a few styles of nursing bras, one or two often messy or stained maternity tunics, or T-shirts.

When breastfeeding, comfort should be paramount to help new moms deal with frequent sleepless nights. But who says you can't have both comfort and style?

Elizabeth Best and her mom, Clareanne Best, invented the Millybutton[™] with nursing moms and babies in mind. They are co-owners of the Pittsburgharea company. The patented breastfeeding apparel accessory helps turn any blouse into a nursing top.

Edith G. Tolchin: Tell us about your background, education and family.

Elizabeth Best: I received my master's degree in architecture from the Savannah College of Art and Design, and worked as an architectural designer in Atlanta until I became a mother in 2008. My daugh-

ter, Milly, is now 8 years old. My mother is a retired registered nurse and has been my biggest supporter and partner in crime throughout this process.

EGT: How does the Millybutton work?

EB: The Millybutton makes every shirt a nursing shirt and saves mothers money on breastfeeding attire. It is the extra hand breastfeeding mothers need. It secures her clothing so she can nurse and pump hands free.

The Millybutton can be conveniently worn as a bracelet accessory, and can attach to a mom's diaper bag or even her refrigerator. Because of its magnetic clasp, we often refer to the Millybutton as "a babe magnet."

It is made from BPA-free, medical grade silicone, meaning it can be sterilized, thrown in the dishwasher, cleaned with a baby wipe—you name it! (BPA stands for bisphenol A, an industrial chemical that has been used to make some resins and plastics since the 1960s.) The silicone band holds a lot of fabric, even a sweater or longer dress, and the encased magnets keep the shirt securely lifted without damaging or crimping the fabric. That way a mom can breastfeed or pump wherever she wants in her own clothes, saving time and money.

EGT: When did you have that first "aha!" moment?

EB: I was a new mom who was having a hard time breastfeeding, which only got worse when I went back to work in a corporate architecture office. I could not afford breastfeeding clothes, and what I did have was not work-appropriate. Pumping at work soon became a stressful and overwhelming experience. One day, my mother and cofounder (a retired nurse) saw me struggling and suggested using a clip. It crimped my top, but in the end, it worked.

EGT: Tell us about your prototyping experience.

EB: We had numerous challenges and created about six different prototypes over a seven-year period. It took us a whopping four years just to secure our U.S. utility patent.

The Millybutton started out as a hard, plastic pendant attached to a chord and was originally worn as a necklace. We switched the design to a bracelet after a mother in a focus group suggested it as a better option. She pointed out to us that it could also serve as a "side reminder," so moms would remember which breast to initiate the next feeding.

We became focused on user-centered design and utilized the standards of the juvenile products manufacturing industry as a guide, with safety a top priority.

Magnets are at the heart of our concept but posed several design challenges. They needed to be encased and strong but not too strong. One of our prototypes erased the hard drive on a mother's laptop!

Also, we discovered that utilizing plastic injection molding was too costly. Our per-piece price was high because we had several pieces, and they required assembly. We almost threw in the towel, but I decided to use my value-engineering skills from architecture

The Millybutton makes

on breastfeeding attire.

every shirt a nursing shirt

and saves mothers money

The Millybutton can be conveniently worn as a bracelet accessory, and can attach to a mom's diaper bag or even her refrigerator. Because of its magnetic clasp, it is often referred to as "a babe magnet."

and applied them to product design. I realized I needed to make the Millybutton all one piece and have the magnet inserted during the manufacturing process.

After discovering open-cast molding, we cut the per-piece price by more than half—all while manufacturing it locally!

EGT: Where are you manufacturing?

EB: We are proud to be manufacturing the Millybutton at Pittsburgh Plastics Manufacturing in Butler, Pennsylvania, a female-owned-and-operated company.

EGT: Tell us about your CPSIA (Consumer Product Safety Improvement Act) testing protocol. No sharp surfaces? No toxic chemicals or dyes? Any other tests?

EB: Although the Millybutton is not intended to be used by children, safety has always been our primary concern. Our design and material choices are based on requirements set for Children's Products Business Guidance by the Consumer Product Safety Commission and the American Society for Testing Materials.

Our product is made from soft yet sturdy hospitalgrade silicone. It is dishwasher safe and BPA-free. The magnets used are fully encased to prevent fracture, rusting and removal. User testing guided our selection of magnets with a safe and effective pull force, prohibitive only for users with pacemakers. Millybutton has no detachable parts as well, and any safety alerts and considerations for users are clearly visible on our packaging.

EGT: Did you use a graphic artist for your logo design and/ or packaging?

EB: Our graphic designer is a professor and a first-time breastfeeding supermom who developed the idea while home on maternity leave. She identified with Millybutton and our mission better than anyone else.

The logo embodies everything we stand for: Milly (the infant who inspired me and challenged me), milk, motherhood, and women supporting women. The M is a strong symbol of a proud and empowered breastfeeding mother. We believe all moms are heroes!

EGT: What obstacles, if any, did you encounter in developing this product?

EB: In addition to all we experienced with the prototyping process, as a woman it is difficult to obtain funding. We are currently self-funded and try to do the best with what we have. That means we grow slowly.

I'd say the biggest overall obstacle was just keeping at it. My mother and I have been learning as we go, which has been a wonderful experience but certainly very challenging.

Like all parents, I find it's a struggle to juggle everything that comes my way. I'm always thinking about how I need to make time for my daughter and husband, the true loves of my life. It is very overwhelming and difficult to manage everything, even with the best project management skills and passion. Elizabeth Best and her mother, Clareanne Best, invented the Millybutton. In the end, it has been both incredibly rewarding and exhausting. And I am so grateful Pittsburgh has an abundance of resources for women entrepreneurs such as us.

EGT: Tell us about your crowdfunding experiences.

EB: The Millybutton is part of the "normalizing breastfeeding movement," but our images were often considered adult content even if they are for educational purposes.

This was something we had not anticipated. Several of our Facebook ads were taken down for this reason during our campaign, so we were not able to get the visibility we sought. Our images may continue to be an obstacle for us as we move forward with online sales. Crowdfunding turned out to be more about market research and figuring out what our audience responded to. I am glad we did not put a lot of money into the campaign on videos and such. We made enough money to cover our tooling cost, and we are satisfied with that.

EGT: Are you selling only on your website, or to retail as well?

EB: Currently, you can purchase the Millybutton on our website, or at these stores: Brambler Boutique in Pittsburgh; Mommy Gear in Ligonier, Pennsylvania; or the Pure Parenting Shop in Houston. Keep an eye on our website blog or Twitter for more details.

EGT: What advice can you share related to your invention process?

EB: I would tell readers to listen to their gut, be open, but never compromise on their vision. Also, tenacity is key. We have encountered so many obstacles—most of them unpredictable—but through a ton of patience and hard work, we got past them and even surpassed what we thought was possible.

Details: millybutton.com

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





1 GET IT MADE

Contact Edie Tolchin – "The Sourcing Lady" (SM) for sourcing, China manufacturing, product safety issues, packaging assistance, quality control, production testing, final shipment inspections, freight arrangements, import services and delivery to your door!

2 GET A WEBSITE!

Contact Ken Robinson – While your order is being manufactured, you need to start working on your WEB PRESENCE! Get people talking about your product on Social Media (Facebook, Twitter, YouTube, Google+), get good search engine placement (SEO)!

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TRADE SHOWS PRESENT GROWING POSSIBILITIES FOR INVENTORS BY REID CREAGER

They mean business: This is a 3D model of Koppers Fishing and Tackle's 20-by-40-foot trade show booth. **rant Koppers** went to trade shows long before he opened his fishing-lure business nearly 10 years ago. It has paid off—literally—and continues to do so.

Koppers recalls scouting the competition, taking photos of booths and generating ideas as to how his company could develop its own booth. Now, the president of Koppers Fishing and Tackle Corp. in Niagara-On-The-Lake, Ontario, Canada, is so fastidious in preparation for trade shows that he doesn't want to reveal some of his secrets. But this tidbit may give you an idea of the planning that goes on: "Because we do all our own 3D modeling for our products, we can build a model of our 20-by-40-foot booths and see it in 3D before we build it. We spend a lot of time fabricating our booths. We have local contractors who build our displays so they're custom-built and have that big-box appearance without that big budget."

An inventor at heart (and in practice, with 18 patents connected to Koppers and his company), his multi-million-dollar business has more than 4,000 dealers selling its products worldwide, headlined by the company's fishing-lure brand LIVETARGET. "I've been going to trade shows my whole life," he says. "They have been absolutely instrumental in growing our company and developing awareness."

The inventor of Oculus Rift, a virtual reality headset, would doubtless say the same. After a \$2.4 million Kickstarter launch the previous year, Irvine, California start-up Oculus VR unveiled the platform at the Consumer Electronics Show in Las Vegas for the first time in 2013. A year later, Facebook bought Oculus Rift for \$2 billion.

Of course, not every inventor realizes these or even any kinds of benefits from the trade show experience. Historically, few of the more than 2,500 such events in the United States each year have been tailored specifically to inventors—although that's changing as shows are creating new ways to attract independent inventors and start-up companies.

For many innovators, the bottom line is being aggressive about improving their bottom line. Possibilities abound that go far beyond the obvious benefits of networking. Trade shows represent a great chance to simply gain attention for your product; determine which other products are on the market in your specific category and gather information about them; make contacts with exhibitors and determine which of your products or services might benefit their company; identify potential licensing candidates; and last but not least, allow

7##

inventors to meet with executives and decision-makers who would otherwise be elusive, if not virtually unavailable. "Anyone who buys in that industry knows they're going to see everything

that's new, everything that's an innovation in that one spot over those three days," says Andy Darmohraj, American Pet Products Association executive vice president who leads the association's trade show department and Global Pet Expo. "So it's easier for them to spend the time and walk around, go into a new product showcase, identify some products they find interesting, rather than having hundreds of manufacturers calling on them and trying to get an appointment. They get to see all of the stuff on their terms."

Getting more inventor-specific

Many trade shows, especially those with new product showcases, are enjoying a steady increase in exhibitors as they themselves innovate to attract inventors. The National Hardware Show, set for May 9-11 in Las Vegas this year, is one such event. The show features a designated "Inventors Spotlight" area, with booths for inventors to display their new product ideas and get feedback.

Nicole Lininger, director for the Invention and New Product Exposition (INPEX) show that will hold its 32nd annual event June13-15 in Pittsburgh, says feedback is one of the most important takeaways for inventors at these shows. "Inventors who maybe don't have that much interaction with companies and decision-makers get the opportunity to practice their pitch and get feedback, which may be a way to improve their idea."

She says INPEX—with 275 to 300 booths on average, featuring about

Oculus VR unveiled its virtual-reality headset platform at the Consumer Electronics Show in 2013. A year later, Facebook bought Oculus Rift for \$2 billion. 1,000 inventions and about 1,000 company representatives walking the floor—is one of the best shows for invention rookies to break in, largely because the show attracts and caters to that crowd. "Typically, we mostly get a new crop of inventors who have never been to a trade show before. It's a good place to learn and get that feedback. The only people exhibiting at our show are inventors."

Some shows are adding an emphasis on small businesses and start-ups. The American Pet Products Association's Darmohraj says that among the roughly 1,100 exhibitors at the Global Pet Expo last year, "probably 150 to 175 of those companies were first-time exhibitors. And the vast majority of those are brand-new, start-up companies." He expects that trend to continue at this year's event, March 22-24 in Orlando, Florida.

The Consumer Technology Association, with 80 percent of its more than 2,200 companies being small businesses or start-ups, owns and produces the Consumer Electronics Show that was held in early January. "We've seen in our post-show survey data that a lot of the bigger companies on the show floor are interested in meeting with inventors and start-ups and forming partnerships," says Allison Fried, CES spokesperson. "It's part of a new storyline that's weaving its way through the show."

Six years ago, the CES upped the ante with a trademarked flagship start-up destination called Eureka Park.

"It's for the guy in his garage, the Mom and Pop shop who had an idea and wanted to get it in front of this global audience," Fried says. "This year we had more than 600 start-ups in this space, up from 500 a year ago. The energy of Eureka Park is so fun. And of the 600 companies, they represented 29 different countries."

A global trend

Like so many of the major shows, CES is focused not only on expanding its reach to inventors but beyond traditional boundaries.

Billed as the largest annual trade show in North America with 2.6 million net square feet of exhibit space, CES continues to target international business via mentorship programs and one-on-one matchmaking. "It's a perfect opportunity for someone with an idea to launch it on a global scale," Fried says.

John Garcia, social media and communications coordinator for ABC Kids Expo (All Baby & Child), says, "We have seen tremendous growth in international attendees, with over 75 countries represented. We also saw expansion in many of our international pavilions at the show, with new countries represented including Turkey and South Korea." He expects the trend to continue at this year's show, October 15-18 at the Las Vegas Convention Center.

This global push often leads to ongoing growth at shows. Doug Poindexter, president of the World Pet Association—organizer of SuperZoo, to be held this year July 25-27 in Las Vegas—says last year's event included almost 1,200 exhibitors as well as showing a 4 percent increase in attendees and 8 percent in companies attending.

"To accommodate the increase, we added 85,000 square feet of exhibit space in 2016. For 2017, SuperZoo will reconfigure its exhibit hall to accommodate roughly 100 additional booth locations."



Below, from left: Global Pet Expo reports a surge in exhibitors representing start-up companies; ABC Kids Expo says it has seen a tremendous increase in international attendees; SuperZoo is reconfiguring its exhibit hall to accommodate a growing number of exhibitors.

Inventors' experiences

The bigger crowds and deeper resources at major shows are generally considered a plus. Lily Winnail, an inventor and owner of Waxhaw, North Carolinabased Padalily, says the larger shows have their pros and cons.

When she attended her first major trade show her company's featured product is a handle pad for an infant car seat—"I gained a lot of exposure. Everyone who's anyone has the opportunity to see your product. The big-box stores have scouts who scour the booths for the next big thing.

"However, that's also how I got knocked off by the 'big guys' who also scour the place to knock off the next big thing. The positive was, I got the attention of

"You've got to attend those big shows with an intention in mind. Meet as many possible license partners as possible and/or sell to as many buyers as you can. You've got to make your mark quickly."

-LILY WINNAIL, OWNER, PADALILY



TOP UPCOMING U.S. TRADE SHOWS

MARCH

March 7-11: Con Expo/Con Agg, Las Vegas Convention Center

March 9-12: Natural Products Expo West, Anaheim Convention Center

March 18-21: International Housewares Show, McCormick Convention Center in Chicago

March 19-21: Seafood Expo North America, Boston Convention Center

March 19-23: OFC-NFOEC (optical communications), Los Angeles Convention Center

March 22-24: Global Pet Expo, Orange County Convention Center, Orlando, Fla.

March 27-30: International Pizza Expo, Las Vegas Convention Center

March 27-31: International Wireless Communications Expo, Las Vegas Convention Center

March 31-April 2: International Vision Expo East, Jacob Javits Convention Center, New York City

APRIL

April 4-7: Coverings Trade Show (tile and stone), Orange County Convention Center, Orlando, Fla.

April 5-7: International Security Conference West, Sands Expo Center, Las Vegas

MAY

May 9-11: National Hardware Show, Las Vegas Convention Center

May 9-11: Lightfair International (commercial trade lighting), Pennsylvania Convention Center, Philadelphia

May 23-25: Licensing International Expo, Mandalay Bay Convention Center, Las Vegas

More listings at inventorsdigest.com, under Resources.

"Find a way at your exhibit to make yourself stand out. Leverage media opportunities. Get in front of as many journalists as you can. Be as personal as you can. Give as many visually appealing assets for people to come and sink their teeth into. Don't be shy!" –ALLISON FRIED, CES

Above: Toyota unveiled its new concept car at this year's Consumer Electronics Show.

Upper right: CES's flagship start-up destination, Eureka Park, had more than 600 companies at this year's show.



a Babies R Us scout and ended up getting my product into their stores, which was a dream come true. The downside is that as a little-known brand, you set yourself up for getting knocked off by companies that could fit your product into their already established line who then wipe you out of your space at the big-box stores."

Winnail advises new inventors that "it's important to know where your product fits best. Is it gift or home improvement? Tech or electronic?

"You've got to attend those big shows with an intention in mind. Meet as many possible license partners as possible and/or sell to as many buyers as you can. You've got to make your mark quickly. I discovered that the big shows are more risky and the smaller, permanent showrooms in major cities such as Atlanta were where my sales skyrocketed.

"My suggestion would be to go as a guest and meet and talk to as many people as possible. Make connections without giving away your invention too soon."

Grant Koppers, aforementioned president of the fishing-lure company in Ontario, Canada, says: "What's most important about a trade show is, it's really brand perception. People can get a lot of perspective about what your company is about when they see your booth or display and in how you display our product. If you just show your product or hang it up on the wall or spread it out on a table, the customer's perception of your product, your brand, your company overall is different than if you have it displayed in a very professional manner."

Koppers, who had just a 10-by-20 booth for his first show, adds that "sometimes it's more beneficial to take a little bigger footprint than what you might consider. If you're between sizes of a footprint, I would lean toward the larger size."

Tips from the shows

It may be wise to be cautious and alert at a show, but being timid probably won't work.

"Differentiate yourself," says Allison Fried of CES. "Find a way at your exhibit to make yourself stand out. Leverage media opportunities. Get in front of as many journalists as you can. Be as personal as you can. Give as many visually appealing assets for people to come and sink their teeth into. Don't be shy!

"And don't invent just to invent. It's important to be able to address real-world problems with your invention."

It's just as important to prepare. Says Andy Darmohraj of the Global Pet Expo: "Before you do any trade



show, make sure you have all of the legal requirements in order, Also, you need to know the types of buyers coming to the show. An independent retailer is going to have very different orders than a Petco or Wal-Mart, so you have to know what your production capacity is. Know the segment you are trying to reach. If you're still doing a limited production, you really want to focus on getting independent retailers to come into your booth to see your product."

John Garcia of ABC Kids Expo reminds that first-time inventors should take advantage of help offered by shows before the event: "It is essential that first time exhibitors attend our pre-show webinars in order to generate the most exposure and obtain significant ROI during the event. Many first-time exhibitors don't really know what to expect and can get lost in the mix. Taking these steps will help them schedule sales meetings before the trade show, gain prospective leads and get them a better shot at being noticed during the event."

Doug Poindexter has other thoughts about gaining exposure. He says inventors "should apply the same marketing principles they put into place when they launch their product to make sure they get the attention of media and retailers who will be at SuperZoo. Being part of the new product showcase is a great start, since it's always a must-see for retailers and media looking to keep ahead of competitors and display attention-grabbing new products in their store."

And don't forget the basics. "Make sure you're prepared as far as being able to speak about your invention," says INPEX's Nicole Lininger. "The 'elevator pitch' is very important when you have 300 booths around you. Have business cards made. If you have samples, make sure they are available with contact info available.

"One of the really important things that you wouldn't think is big deal is making sure your contact information is correct. I often get calls from an attendee who was given information that was in error. Keep your contacts in a safe place." $\hat{\mathbf{v}}$



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any inventors, especially those on a tight budget, can benefit by starting their marketing efforts at smaller regional or highly specific trade shows and conferences.

Such shows are usually less expensive. Focusing on smaller regional shows makes it easier to meet industry people in your geographic area who can become your mentors and help successfully launch your product. Highly specific shows allow you to target customers who particularly benefit from your product.

Success at conferences

Twenty-five-year-old Thomas Larson was a student volunteer in the mechanical engineering department at the University of Washington when he noticed the need for a mobile microscope.

Existing products cost in the hundreds of dollars, and they were large and difficult to transport. Larson came up with an idea for a lens that fits over the camera lens in a mobile phone. His Micro Phone Lens raised more than \$230,000 in three Kickstarter campaigns, and he built the equipment needed to produce 4X, 8X, 15X and 150X lenses. More than 7,000 people funded the campaign, with promise of a 15X for a \$12 donation in the first campaign, and a 150X lens for \$29 in the second campaign.

Larson's dilemma was that the funders had a wide variety of applications ranging from educational, crime scene investigations, inspection of documents and artwork for forgery, and gardeners looking closely at plants. He decided to focus on education and started attending science teacher conferences in the state of Washington area, where the number of exhibitors could be from a handful to 50.

"The conferences were great for me," he said. "I received feedback about what teachers wanted and was able to set up classroom demonstrations where I saw how the product worked for students." An added plus: Most of the attendees stopped by his "booth"—a 5-by-2-foot table with a few posters and some literature. He has generated word-of-mouth publicity, and his sales are starting to occasionally exceed 1,000 units per month. To learn more about his story: contact@ microphonelens.com.

Contests

Inventor contests are another avenue for inventors to expose their product without the big expense of a major trade show. NBC's "Today," along with QVC, sponsors the Next Big Thing Contest every January and February (submitmyinvention.com/submit1b/qvc-sprouts). The Small Business Administration runs the InnovateHER contest for innovative products and services that help affect and empower the lives of women and families (challenge.gov/challenge/2017-innovateher-innovating-for-women-business-challenge).

These contests come and go; companies such as Wal-Mart, Staples and Hammacher Schlemmer have all had contests in the past. Google search for invention contests, then click on the News tab. Scroll to the bottom of the screen and click on the button for "Create alert" on the right. This will deliver to your email news of invention contests as they open.

Calls for new products

Retailers, home shopping networks, mail order catalogs and members of the direct response industry frequently call for new products to review. For example, Pets at Home has announced that it is to hold two 'Innovation Speed Dating' days in 2017. One day focused on food and treat innovations; the second day focused on non-food and accessory innovations. See onestopinventionshop.net/blog/2017/01/pet-retailerlooking-inventor-products/.

QVC has a program, QVC Sprouts, where you can submit your invention at no charge. Viewers then vote on which idea they like best, and QVC puts the most popular program on TV.

Direct response TV companies are always looking for new products. An example is Telebrands (telebrands.com/inventors/), which has an active program that seeks new products from inventors. You'll find many of the other major companies have similar programs. *Response* magazine (responsemagazine.com), is the industry's major trade magazine. You can get information about many of the programs from its website.

The best way to find out which companies have contests or are looking for product is through industry trade magazines—magazines targeted generally to industry retailers and suppliers. This includes manufacturers and distributors. One website that offers trade magazines is webwire.com/IndustryList.asp. A much more complete source is the *Gale Directory of Publications and Broadcast Media*, which is not available free on the internet but can be accessed through larger libraries. Gale (gale.com) provides the most complete list of trade magazines.

Finding regional events

Locating regional trade shows has become easier as websites have started to add more of the smaller shows to their information package. The one that I've found most helpful is biztradeshows.com/usa/?p=3. Other sources that provide much more detailed information include trade magazines and associations.

Trade magazines

HBS Dealer is a trade magazine targeting hardware and building supplies retailers. Inventors should always start getting relevant trade magazines when they start with an idea. These magazines have information about new products, marketing managers and research and development managers at industry companies, articles about new industry strategies—and most important, they almost all have a list of large and small trade shows, as well as industry conferences. For example, hardware distributor House of Hanson has three local trade shows in Tennessee. Those trade shows typically would have an announcement in the trade magazine.

Associations

Industry association websites such as the National Retail Hardware Association (nrha.org) also frequently post upcoming trade shows. Generally, the only way to find out about upcoming small conferences is by looking for the particular small association. For groups such as the Washington Science Teachers Association, Gale is the only comprehensive source.

Goals at a small show

Some inventors sell their product exclusively via the internet, either through their website or at stores on Facebook or Instagram. These inventors should still attend small regional shows. They receive the same benefits as inventors who are looking to develop a retail distribution plan, such as:

- Direct feedback from many users, which is essential for improving your product. This also gives you a much better idea of whether your product has a reasonable chance of success.
- Finding other people in the market that are in your geographic area. If you can find other local inventors or marketing people in the industry, you will have options to explore. You can combine efforts to overcome resistance to a small one-product

company, or you might be able to share contacts to help expedite sales. At a minimum, you can share market experiences with other contacts.

 Setting up local tests to demonstrate your product's effectiveness. You should be able to generate testimonials from people who use your product successfully.

Preparing for a small event

Thomas Larson went with just a 5-by-2 table and some simple posters and literature for his first shows. Some companies had much bigger displays and much better literature. But that shouldn't concern you.

Your goal should be to minimize your costs of attending the show until you are sure your product will sell. Remember: The advantage of a small show is that there is a limited number of booths for people to review, so they will often come over to see you. You can increase your visits if you highlight that you are a local inventor. $\mathbf{\hat{v}}$

Don Debelak is the founder of One Stop Invention Shop, which offers marketing and patenting assistance to inventors. Debelak is also the author of several marketing books, including Entrepreneur magazine's Bringing Your Product to Market. He can be reached at (612) 414-4118 or dondebelak34@msn.com. Thomas Larson enjoyed great feedback and visibility for his Micro Phone Lens at a small conference.



PATENT PENDING

Follow Wal-Mart's Lead on Provisional Patent Applications

ITS SERIAL STRATEGY ON SELF-DRIVING CART LED TO FASTER APPROVAL **BY GENE QUINN**

ceently I came across U.S. Patent Application No. 20160260161, owned by Wal-Mart Stores, Inc., which relates to a self-driving shopping cart. The patent application covers an innovative system that will utilize a series of docking stations, sensors, motors and cameras to offer consumers the ability to "hail" a shopping cart using an app on their smartphones, as they would a taxi or Uber. Upon completion of use, the system will somehow be able to recognize abandoned carts within the store or in the parking lot so that they will be manually returned to a docking station for use by another consumer.

This patent application was filed by Wal-Mart on March 4, 2016, and published six months later. At first, that seems rather quick; patent applications typically publish 18 months after they have been filed. However, publication rules say that patent applications publish 18 months after the earliest priority date, which is not always 18 months from the filing of the non-provisional patent application. In this case, Wal-Mart filed a provisional patent application on March 6, 2015, which meant that in order to claim priority from that provisional filing it had to file a nonprovisional patent application on or before March 6, 2016—which it did.

The first section of the specification (i.e., the written part of a patent application that is not the patent claims section) is almost universally the discussion of related patent applications, if any. This is the section of the specification in which earlier filed patent applications that provide priority for the present application are listed. This particular Wal-Mart patent application includes an exceptionally long list of prior filed applications that will each be used to provide priority. All of the previously filed patent applications in this chain are earlier-filed provisional patent applications.

Wal-Mart claimed priority to each of 37 separate provisional patent applications!

SHUTTERSTOCK

File first. File often—even if that means filing serial provisional patent applications before filing a non-provisional patent application that wraps everything together.

Leveraging first-to-file

I have suggested this serial provisional patent application strategy for many years, although this Wal-Mart patent application takes that to the extreme. Still, this application is instructive. Now that the United States has become a first-to-file country, filing serial provisional patent applications is essential. Of course, most will never file this number of provisional patent applications. Seeing the number of provisional filings does, however, indicate how important this invention is to Wal-Mart.

With any invention, there will always be a stream of conceptions and reductions to practice. The best practice is to file as soon as you have an invention that is susceptible to adequate description through words and drawings. File first. File often—even if that means filing serial provisional patent applications before filing a non-provisional patent application that wraps everything together. You can always claim priority going back to more than one provisional patent application, as long as they were filed within 12 months of the filing of the non-provisional patent application. That's what Wal-Mart did.

Kate Gaudry and Tom Franklin, attorneys at Kilpatrick Townsend, recently explained in an IPWatchdog.com article that the first-to-file rules should have led to more provisional patent applications being filed. However, their data analysis shows that more provisional patent applications are not being filed, which is rather shocking. It is worth noting that Kilpatrick Townsend is a venerable, large law firm that for the most part caters to large clients or well-funded startups. Gaudry and Franklin explain that they recommend and use serial provisionals with their clients.

Some patent attorneys hate provisional patent applications and tell clients that they should never use them. These attorneys incorrectly say that if you can file a provisional patent application, you can and should just file a nonprovisional patent application. But ask yourself: If serial provisional patent applications seems like a good strategy for Wal-Mart—one of the world's largest corporations—and if they are recommended by the likes of Gaudry and Franklin at a well-respected law firm such as Kilpatrick Townsend, why wouldn't serial provisional patent applications be an appropriate strategy for independent inventors, small businesses and start-ups working with a shoestring budget?



File as you work

The best use of a provisional patent application is to establish priority rights as soon as you have an invention that can be patented. In a first-to-file world, you want to have a filing date as soon after your conception of the invention as possible. But in many, if not most circumstances, inventors continue to work with the invention, improve what they've invented or work on additional versions of the invention.

If you are going to continue working on the invention, a provisional patent application is a great idea. File the provisional application as reasonably soon as you can, making sure you describe what you have with as much detail as possible. Then as you continue working on the invention, as you make more advances, you may want to file another provisional patent application, and so on. By using serial provisional patent applications, you get priority for your invention as close in time to conception of various aspects of your invention as possible, which is extremely important the way the patent system is set up today.

Whether or not you like Wal-Mart, whether you think it is a good corporate citizen, or whether you want the store in your neighborhood, it is impossible to argue with the extraordinary success the company enjoys. If serial provisional patent applications seem like a good idea for it, they should seem like a good idea for you.

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.

Home Scare Yields a Promising Product

INIRV REACT'S JOURNEY, FROM CONCEPT TO TRADE SHOW BY JEREMY LOSAW

kshita Iyer, Radhika Iyer and Ranjith Babu went to the movies, only to return home to a horror show. Their invention to address a home-safety issue is a story that highlights the growing importance of the Internet of Things, as well as the key roles of design engineering and marketing in bringing a product to market.

Radhika Iyer of Buffalo, New York, was visiting her daughter, Akshita, in Durham, North Carolina in 2015. The opening credits were rolling when Radhika—who had been cooking during the day had an unsettling sense that she hadn't turned off one of the stove's burners. The three grudgingly returned home to make sure; when they arrived, the house was engulfed in smoke. Fortunately, no fire had broken out—but the scare provided the spark to create a device that could help protect others in the same situation.

The Inirv React smart stove device is the latest IoT creation to land on the Enventys Partners workbench

in Charlotte. As consumers and companies show a growing interest in IoT devices, related products are popping up in categories that include home automation, automotive and recreation. These connected smart devices aren't just about convenience. Some are designed for safety or even saving lives.

The Iniry React replaces existing stove knobs with motor-driven smart knobs that automatically turn off the stove if an unsafe condition is detected in the kitchen. The system features a ceiling-mounted sensor that detects motion, gas and smoke, and a knob unit to control the burners. It is compatible with most stoves that have mechanical knobs and features an app that can be used to control the position of the burners.

"After experiencing a stove fire, we needed to find a way to create a device that would prevent these disasters," Akshita Iyer said. "With the experience and talent of the Enventys team, we've been able to build a unique and effective smart home safety device that is poised to save lives around the world."

Left: Inirv React knobs blend in with the rest of the stove.

> Right: Industrial designer Raeshon McNeil works on the sensor unit prototype.



Teams go to work

After their scare at home, Inirv cofounders and Duke graduates Ranjith Babu and Akshita Iyer conducted research that showed cooking equipment is the No. 1 source of house fires, costing Americans over \$1 billion dollars in damage each year. With this added motivation, the couple came up with their idea for a connected smart device but needed help to bring it to life. So they reached out to a local design firm to help them make some prototypes.

The first models allowed them to vet the patentable technology behind the product and garner interest from investors. However, their prototypes were lacking in some areas. The knob unit was too big, heavy and expensive, and the aesthetics of the device were not refined enough to live in the home environment.

Last fall, the Inirv team found Enventys Partners, which offered the needed full-service design engineering and marketing services. In mid-October, the design team was challenged to give the React a whole new look in a smaller package so that the product could be launched on Kickstarter and at the Consumer Electronics Show in Las Vegas in early January.

With no time to waste, the design, engineering and electronics teams started work simultaneously. The

design team studied the kitchen environment and trends in the IoT marketplace. The team drove the conceptual development of the project and gave the sensor and motor units their new iconic style.

The primary goal for the engineering team was to reduce the unit's diameter and height. That team reviewed the existing CAD files and looked at solutions to shrink the drive train while delivering the torque required to turn the stove knobs. The electronics team immediately started breadboarding (prototyping) the circuit with Cypress Bluetooth Low Energy development modules and started working on the code to read the sensors, control the Bluetooth communication, and drive the motors and LEDs.

Deadlines turn up the heat

The first major deadline was mid-December, for filming a Kickstarter crowdfunding video and shooting collateral images. The design and engineering team used SolidWorks CAD software to design the shells and drivetrain to house the internals while maintaining the new aesthetic. Just after Thanksgiving, the shop built and assembled 3D-printed parts. In the meantime, I designed and built circuits with Trinket microcontrollers to drive the units for filming. The prototypes, painted and given an A-level finish, were done just in time for our film shoot.

<complex-block>

The Inirv team at the Consumer Electronics Show, left to right: Radhika Iyer, Akshita Iyer and Ranjith Babu.

LED INDICATOP Bright halo light

PROTOTYPING



Jeremy Losaw and Patrick Bailey test-fit some prototype parts.

Below right: The industrial design team composed this concept sketch rendering.

> With no time to waste, the design, engineering and electronics teams started work simultaneously.

After filming, we had two weeks to get a functional prototype ready for the CES show. We made a number of tweaks to the mechanical design and got updated knob units 3D-printed. However, the biggest challenge was the circuit board. The knobs are small, so it was a puzzle to get the Bluetooth low energy and microprocessor module to fit inside the housing. Engineer Patrick Bailey worked hand-in-hand with electrical guru Larry Ober to end up with three boards for the device that fit perfectly inside the knob.

The boards arrived just a week before the show, so it was a sprint to get it ready. With so many small parts, it takes a full day to get the PCBs populated with all of the electrical components. Then there is the matter of troubleshooting the circuit. We had some issues with the LEDs that cost us some time, and the day before the show we found a short on the board and had to remove half of the components on the motor PCB to fix it.

At 5 a.m. of the day the prototypes had to leave, we did our final systems check and got everything boxed up. Following 28 hours with no sleep, I went home for 40 minutes to shower, grab my bags and say goodbye to my kids before heading to the airport for the CES show.

Savoring a satisfying journey

After arriving in Las Vegas, I jumped in a cab with "Fast Eddie," a Bulgarian taxi driver with 35 years'



PHOTO BY ALEX WERBICKAS

experience on the strip. He got me safely to the hotel, and I got all of the parts unpacked for one last test. Fortunately, all of the prototypes made it in one piece and worked flawlessly.

In the morning, I arrived at the show and got the demo set up. The Kickstarter campaign had launched the night before and was already at \$20,000 after the first day. After many weeks of long hours, I finally got a chance to enjoy the journey and a job well done, especially a great sense of pride for the product and to be part of the Enventys Partners team that helped bring it to life.

Inirv React has had a great launch. The product was well received at CES by other industry professionals, and the team is in early-stage talks with larger manufacturers for potential licensing deals. The Kickstarter campaign continued to flourish; with 10 days left, the project with a \$40,000 goal had surpassed \$130,000.

However, the development work on the product is not over. We are working on final design files for the mechanical and electrical components and are pushing to start working with a manufacturer in the spring, and delivering the first production units to Kickstarter backers toward the end of 2017. €



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YE ON WASHINGTON

Ruling by PTAB a Blow to Patent Eligibility

PANEL DECLARES MRI MACHINE AN ABSTRACT IDEA, PATENT INELIGIBLE UNDER *ALICE* **BY GENE QUINN**

n a roundly criticized decision, the Patent Trial and Appeal Board of the United States Patent and Trademark Office recently ruled in Ex parte Hiroyuki Itagaki a magnetic resonance imaging machine to be patent ineligible because it is an abstract idea. The PTAB cited the U.S. Supreme Court's landmark 2014 decision in *Alice v. CLS Bank*, in which the court ruled that an abstract idea does not become eligible for a patent simply by being implemented on a generic computer.

U.S. Patent Application No. 20,100,119,136, titled Magnetic resonance imaging apparatus and image classification method, relates back to a Patent Cooperation Treaty filing date from April 2008. The applicant appealed two different obviousness rejections. The PTAB overruled the patent examiner, finding the claims were not obvious, but instituted a new ground of rejection. That new ground of rejection for this MRI machine related to lack of patent eligibility under U.S. Code Title 35, Section 101 because the machine is nothing more than an abstract idea.

The illustrative claim discussed by the PTAB in the decision was Claim 1, which unambiguously relates to a machine. Claim 1 was specifically and unambiguously directed to "a magnetic resonance imaging apparatus." For reasons not explained by the PTAB panel, the *Alice/Mayo* framework was used to determine whether this machine claim is patent eligible. (In a 2012 ruling, the Supreme Court ruled that process claims at issue in *Mayo v. Prometheus* are not patent-eligible subject matter.)

The Alice/Mayo framework

To this point, the *Alice/Mayo* framework has only been used with respect to software patents and life science-related innovations, but I have not seen the framework applied to machines. The framework has been limited in applicability to when there is a possibility that one of the three so-called judicial exceptions to patent eligibility may be in play. Those three judicial exceptions relate to abstract ideas, laws of nature and nature phenomena. If the claim does not implicate one of those judicial exceptions, the claim is patent eligible.

This framework requires the decision maker—whether a patent examiner, administrative tribunal or reviewing court—to ask and answer a series of questions before determining whether the patent claim in question constitutes patent eligible subject matter. The first question, commonly referred to as Step 1, is whether the patent claim covers an invention from one of the four enumerated categories of invention defined in U.S. Code Title 35, Section 101 (i.e., is the invention a process, machine, article of manufacture, or composition of matter). If the answer to this question is "no," the patent claim is patent ineligible. If the answer is "yes," the decision maker must move on to the next inquiry because the statutory test established by Congress is no longer the complete test for patent eligibility in the United States.

The second question (commonly referred to as Step 2A), where the *Alice/Mayo* framework truly begins, requires the decision maker to ask whether the patent claim seeks to cover one of the three specifically identified judicial exceptions to patent eligibility. Although there is no textual support for the creation of any judicial exceptions to patent eligibility in the Patent Act, the Supreme Court has long imposed its extra-judicial view of the statute relative to patent eligibility.

In the case where the patent claim seeks to cover a judicial exception to patent eligibility, the final question (commonly referred to as Step 2B) asks whether the inventive concept covered in the claimed invention added "significantly more" than the judicial exception, or whether the claimed invention did not add "significantly more" and, therefore, was seeking to merely cover the judicial exception.

The PTAB's analysis

In this case, the PTAB panel did not examine the statutory language to determine whether the claims were drawn to a process, machine, article of manufacture, or composition of matter. Had this happened, the panel might have noticed that the invention being claimed is a machine (i.e., apparatus, which in patent terms is indistinguishable from a machine).

The PTAB panel starts its *Alice/Mayo* analysis with Step 2A and somehow determined that "the claimed subject matter is direct to classification." How or why the panel chose to ignore the explicit language of the claim is not explained. Neither is it explained how the panel could possibly determine that a claim explicitly drawn to a machine was not directed to a machine. In any event, the PTAB panel concluded "the classification concept is an abstract idea."

The PTAB panel then moved on to Step 2B of the *Alice/Mayo* framework in search of an inventive concept. The panel wrote: "We see nothing in the subject matter claimed that transforms the abstract idea of classification into an inventive concept."

This decision completely misses the point that what is claimed is a machine.

Eventually, the PTAB panel gets around to acknowledging: "Claim 1 describes a multi-station MRI, comprising an image acquisition unit, a display control unit, a classification processing unit." The decision, however, seems to search for its own vindi-

This decision completely misses the point that what is claimed is a machine.

cation of ruling a machine patent ineligible by pointing out that there is no requirement that the MRI be computer implemented.

Ultimately, the PTAB panel concludes: "[M]erely reciting a generic multi-station MRI so as to apply the classification abstract idea to its images is insufficient to transform the classification abstract idea into an inventive concept."

Conclusion

The administrative patent judges who participated in this panel should be suspended or removed from the PTAB altogether and if that isn't possible, within the bureaucracy of the federal government they should be sidelined indefinitely so as not to do any more damage.

A decision finding a machine claim abstract has to be a bridge too far for even the most vocal proponent of the *Alice/Mayo* monstrosity. Many people openly mocked me as I wrote that the *Alice v. CLS Bank* decision would be used and intentionally misinterpreted by those who ideologically oppose patents. In the 33 months since the decision, my predictions have sadly come true.

If this decision stands, we might as well shutter the patent office. Because in this age of artificial intelligence and virtual reality, little of consequence will be patent eligible if a machine is an abstract idea. 0



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NORTHERN RESPONSE

Goodlatte to Pursue Patent Litigation Reform

HOUSE JUDICIARY CHAIR'S AGENDA MAY NOT BE INVENTOR-FRIENDLY BY GENE QUINN

ongressman Bob Goodlatte (R-Va.), who holds the chairmanship of the House Judiciary Committee and will wield great power over intellectual propertyrelated legislative reforms during the next two years, unveiled his agenda for the 115th Congress on February 1. Not surprisingly, a portion of his agenda includes additional patent litigation reform to address what he characterizes as "truly frivolous lawsuits," as well as reforms to keep America's patent laws up to date and copyright reforms to help ensure "America's global leadership in creativity and innovation continues."

Regarding intellectual property, Goodlatte promised additional patent litigation reform aimed at eradicating frivolous lawsuits. This will make for an excellent sound byte on the evening news, but the problem is that technology users have increasingly engaged in systematic and near collusive schemes to efficiently infringe patents. They simply ignore patent rights of innovators, do what they want, and rely on changes to substantive patent law and procedure that enable them to beat back any enforcement attempts by patent owners.

For those limited circumstances in which they are unable to play the war of attrition to defeat patent owners, they resort to the claim that any lawsuit they face is frivolous. In fact, last year Congressman Darrell Issa (R-Calif.) interchangeably used the terms "patent owners" and "patent trolls," as if it is black-letter doctrine that all patent owners are patent trolls and all patent infringement lawsuits are frivolous.

Supported controversial act

Though Goodlatte will receive high praise in some circles for his efforts to end frivolous lawsuits, during the 114th Congress he not only supported but introduced the Innovation Act—which would have made significant modifications to U.S. patent laws that were seen as unfavorable by many innovators and independent inventors. My personal view on the Innovation Act is that it would have been a disaster. Of course, the Innovation Act was fought back in both the House and Senate, and it seems that it will need to be fought back again during the 115th Congress.

Even with Goodlatte's pledge to move forward on patent litigation reform, the facts are likely against him and his allies in Silicon Valley. The popular press urged on by Silicon Valley elite companies that make up the socalled infringer lobby—continues to write that frivolous patent litigation is a problem, but statistics paint a very different picture.

Patent litigation is sharply declining in America, with the number of patent cases dropping 22 percent last year. The continuing decline of patent litigation is one of the reasons the Innovation Act stalled during the 114th Congress. With patent infringement litigation dropping even further since the Innovation Act last failed, the act seems unlikely to regain the widespread support (325-91) that the bill enjoyed in the House in December 2013. The bill still failed in the Senate. But you can certainly expect Goodlatte and his allies to keep trying.

With respect to copyright reforms, although Goodlatte's statements are non-specific, from what I hear there will be a push to make a number of changes to copyright law and procedure. So when he says there will be "numerous policy proposals to reform aspects of our copyright laws," he should be taken seriously.

Some copyright issues will likely not be particularly partisan or contentious. There will be an attempt to remove the U.S. Copyright Office from the Library of Congress. Members of Congress seem to either be in favor of such an effort or largely ambivalent.

This effort could also be coupled with an attempt to remove the Patent and Trademark Office from the Department of Commerce, which would then create a separate intellectual property agency perhaps akin to the Federal Communications Commission. Although removing the copyright office from the Library of Congress likely won't be contentious, if attempts are made to remove the patent office from Commerce that would slow things down considerably. Whether it would be a poison pill remains to be seen.



Goodlatte's Agenda Statement

"To make America more competitive again we must also make our legal system more efficient and fair. America's legal system is considered the costliest in the world. In fact, one study found that liability costs in the United States are more than 2.5 times that of Eurozone countries.

"While we must protect the ability of Americans to seek redress through the courts when they are truly damaged or injured, there are measures we can take to reduce the wasteful burden that truly frivolous lawsuits impose on American competitiveness. Like excessive regulation, frivolous lawsuits are a drain on businesses, entrepreneurs, innovators, and hardworking Americans. We can and must do better.

"Over the next Congress, the House Judiciary Committee plans to reform the litigation system by seeking to reduce frivolous lawsuits, making it harder for trial lawyers to game the system, and improving protections for consumers and small businesses.

"We'll also work on reforms to discourage abusive patent litigation and keep U.S. patent laws up to date. Collectively, these reforms will help alleviate the wasteful burden of unnecessarily expensive litigation costs, thereby freeing small businesses to flourish, unleash innovation, and create new jobs for Americans.

"The House Judiciary Committee will also build upon its review of our nation's copyright laws to ensure that America's global leadership in creativity and innovation continues in the 21st century and beyond.

"At the end of 2016, we issued our first bipartisan proposal to ensure the Copyright Office keeps pace in the digital age. Among the reforms contained in our first proposal are granting the Copyright Office autonomy and requiring it to maintain an up-to-date digital, searchable database of all copyrighted works. This proposal is the first of what we intend to be numerous policy proposals to reform aspects of our copyright laws."

Push for balance coming?

How far Goodlatte will go with respect to copyright reforms remains unknown, but U.S. copyright laws are in serious need of updating. Attempts to update copyright laws to address rampant copyright infringement in the digital world generally, and on the internet specifically, came to a sudden halt when activists protested and threatened to hijack the internet.

In 2011 and early 2012, it seemed virtually certain that the House of Representatives would pass the Stop Online Piracy Act and the Senate would pass the PROTECT IP Act, which would then lead to some sort of compromise between the two bills. In the wake of protests and threats, the White House announced it would not support either bill and the wheels fell off attempts to provide copyright owners with better tools to fight rampant copyright infringement.

I don't know that anyone expects something like SOPA or PIPA to resurface, but it seems likely that there will be a push to balance the playing field by tilting the law toward copyright owners and away from infringers who seem to be able to infringe with impunity. $\widehat{\mathbf{v}}$



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MARCH 2017 INVENTORS DIGEST 39

Survey on IPRs, PTAB Trials Comes Into Question

DESPITE RESULTS, PATENT OWNERS DO NOT LIKE INTER PARTES REVIEW CHALLENGES **by gene quinn and steve brachmann**

egal intelligence firm Bloomberg Law and the American Intellectual Property Law Association recently released the results of a survey, "Patent Owners, Petitioners Not Far Apart on PTAB Value."

According to Bloomberg and the AIPLA, the survey results released February 3 suggest that complaints from patent owners and other stakeholders in the U.S. patent system surrounding high patent invalidation rates at the Patent Trial and Appeal Board "have largely subsided." The report argues that patent owners find value in PTAB trials and that inter partes review challenges are beneficial. (Inter partes review is a trial proceeding to review the patentability of claims in a patent, only on grounds that could be raised under U.S. Code sections 102 or 103, and only on the basis of prior art consisting of patents or printed publications.)

The conclusions reached defy common sense, do not comport with the experience of actual patent owners, and the survey does not hold up to even cursory scrutiny.

Critics weigh in

The numerous problems with the Bloomberg/AIPLA survey will undoubtedly be misused by those who want to push the false narrative that patent owners and innovators in general find challenges to their patents to be a good thing from which they derive real bene-

fit. "Who could possibly find benefit in paying hundreds of thousands of dollars to defend a patent before making one dime? That's neither intuitive nor practical," said Warren Tuttle, president of the United Inventors Association. "A far more likely scenario is that large entities wish to efficiently infringe upon patent rights with the prospect of getting new technology for free. This survey does not speak to the reality that I know independent inventors and entrepreneurs face."

It is impossible to believe that patent owners think it is beneficial to have their patents challenged after they spent five to 10 years to obtain them at a cost of many tens of thousands of dollars. It is absurd to believe that patent owners think it is beneficial to have their patents challenged, when a typical challenge will run between \$500,000 to \$1 million in attorneys' fees through conclusion. It seems doubtful that a poll of actual patent owners would ever find it to be beneficial to have to defend a patent that is supposed to be presumed valid in a proceeding where the patent will not be afforded any presumption of validity. Furthermore, many patent owners are subjected to multiple, repeat challenges that number in the dozens. Some patent owners have six or eight IPRs filed on the same patent, sometimes more.

"Independent inventors and many start-ups have no assets, so a patent must be able to attract the investment needed to build assets," explained Paul Morinville, an inventor, patent owner and board of directors member at U.S. Inventor. "IPRs have gutted the value of small patent portfolios, and that has gutted investment in independent inventors and patent-centric start-ups. This survey obviously did not ask the right set of people."

> "The article seems to gloss over the fact that the majority of patent owners do not favor the existence of the AIA (American Invents Act) procedures," said Bob Stoll, a partner with Drinker Biddle and former commissioner for patents with the United States Patent and Trademark Office. "If anything, the study can be used to support the premise that further reforms are needed."

It shouldn't be surprising that the survey flies in the face of everything we know and comes to the wrong conclusions. Patent owners and innovators loathe IPRs, but no patent owners or innovators who were likely to hold negative views of IPRs were included in the survey. Was the survey merely statistically invalid? Perhaps, but given how the conclusions are so contrary to conventional wisdom; the survey sample is ridiculously small; and the survey did not include those constituencies known to be suffering at the hands of IPR, one has to wonder.



"Regardless of one's position on IPRs, as our recent presidential election has shown, all surveys—especially ones involving a small, non-representative sample—should be interpreted with skepticism," said Robert Rauker, medical device company CEO, patent owner and inventor.

No patent owners responded

The survey included no actual patent owners as respondents. Instead, the study itself notes that the survey, which was available online last year from mid-November to mid-December, was completed by a total of 167 patent attorneys. So any time the study says that it's portraying the opinion of a patent owner (which it does, numerous times), it's actually only portraying the opinion of a patent attorney who has represented a patent owner. This becomes quite indicative of a biased sample.

"How many responses were filed by the same high-tech companies that pushed for the passage of the AIA and were pushing for additional patent reform?" asked John Calvert, executive director of the United Inventors Association and a former associate commissioner for patents at the USPTO. "Until the results can be broken down into finer statistics, we cannot truly understand what the inventor community really thinks of the way AIA affects the strength of patents since its passage. All we have in this report are general facts from the 167 respondents, 62 of who are in-house attorneys."

How many of those patent attorneys surveyed and characterized as patent owners are from companies that engage in a never-ending quest for more patent reform, such as Google? We know that 70 percent of the corporate respondents came from Fortune 1000 companies, which means they come from the largest companies in the world and have at least \$1 billion in annual revenue. That factor alone suggests a substantial skewing of what was already an extremely small sample size.

We know that large entities are the ones that have been engaging in efficient infringement schemes and filing large numbers of IPRs so they do not have to pay for the patent rights they trample. Google, for example, is one of the largest patent acquiring companies in the world, which absolutely makes it a patent owner. Still, it is famously (or perhaps infamously) known as the company behind the push to weaken the U.S. patent system.

Microsoft is another company that is a massive patent owner but files numerous IPRs—sometimes multiple IPRs against the same patent on the same day. How can you actually assume these large corporate entities that engage in near-collusive efforts to ignore patent rights and efficiently infringe really represent the broad category of patent owners? Based on the survey details, there is reason to suspect that the so-called "patent owners" were more wolves in sheep's clothing than anything else.

But let's step back for a minute and try to apply a scintilla of logic. How could any patent owner be in favor of IPRs and really believe they create a "gold plated" patent anyway? That may make sense in theory, but in practice that isn't what is happening.

While winning at the conclusion of the IPR would to some extent "gold-plate" the patent with respect to novelty (U.S. Code Title 35, Section 102) and obviousness (Section 103), the patent is still susceptible to challenges in court for lacking patent-eligible subject matter (Section 101) and for an inadequate description (Section 112). And just because you win one IPR challenge doesn't mean that another entity can't bring another IPR challenge, and just because you prevail in an institution decision doesn't mean further challenges cannot be brought and instituted. Of course, there is also the fundamental lack of due process afforded patent owners at the PTAB, the inability to amend claims despite the statute giving patent owners the right to amend, and the PTAB being able to ignore even timely submissions made as a matter of right.

Look at the case law

"It is not surprising that there would be many patent owners who believe that IPRs could, on some level, be beneficial to them. After all, that's what they were promised in the AIA," said Hans Sauer, deputy general counsel for intellectual property at the Biotechnology Innovation Organization. "But I really wonder whether all respondents operate under the correct assumptions, or have been following the case law closely.

"Any patent owner who has defeated an IPR petition, only to see renewed petitions using the prior non-institution decision as a how-to guide, is likely to take a dim view of the proceeding. Patent owners who believe the PTAB will diligently resolve issues for district court litigation must never have run into the board's 'redundant grounds' practice, under which presented grounds are neither instituted nor denied on the merits, only to hang out there for re-assertion later. Patent owners who believe that the one-year litigation time bar will protect them from having to re-litigate their patent in the PTAB must never have experienced 'proxy' IPR petitions by dubious third-party petitioners. Variations of the "multiple bites at the apple" theme simply abound in IPR. This is good for IPR petitioners, but it's unambiguously bad for patentees."

Everyone familiar with how biotech and pharma companies

think know that they don't believe what is reported by Bloomberg and the AIPLA. It is well known that they are lobbying very hard for a legislative fix, and yet there is no pause or question raised? The results fly in the face of logic and real-world practice; that alone should have raised significant questions about the credibility and reliability. "There are no results from actual patent owners, independent inventors, entrepreneurs or small businesses," Calvert said.

Bloomberg and the AIPLA should have known something is seriously askew rather than release a report that will be fundamentally misused. That is particularly true, given that the AIPLA has been on record for supporting significant reforms to post-grant challenges—specifically being supportive of the STRONG Patents Act submitted in the 114th Congress by Senator Chris Coons (D-Del). Does this survey suggest a shift in the AIPLA's belief that something needs to be done about the post-grant procedures at the USPTO? That would be highly unusual, considering that it just submitted comments to the USPTO again raising significant concerns about certain aspects of post-grant practice.

"There are no results from actual patent owners, independent inventors, entrepreneurs or small businesses." – JOHN CALVERT, EXECUTIVE DIRECTOR, UNITED INVENTORS ASSOCIATION

Convenient disclaimer

The closing comments section of the PTAB study starts with this disclaimer:

"The explanations in the previous section and other conjecture in this paper are intriguing and call for more study of the phenomena recorded in the results. And a real-data statistical analysis of the link between outcomes in the PTAB and district court final dispositions is still wanting."

No kidding.

"I am concerned with the reporting of this survey, as there is nothing to suggest that independent inventors, entrepreneurs or the start-ups they create were actually involved in its polling," Tuttle said. "In fact, most of the thousands of inventors and entrepreneurs that I know do not view the AIA favorably, are not in favor of the current post-grant processes, and are upset when costly issued patents they presumed were 100 percent valid may no longer be." ♥

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



Examining Gorsuch's IPRECOURT NOMINEE WOULD LIKELY END CHEVRON DEFERENCE BY GENE QUINN

fter U.S. Court of Appeals for the 10th Circuit Judge Neil Gorsuch was recently nominated by President Donald Trump to be a United States Supreme Court judge, initial indications from Republicans suggested they will do whatever it takes to see him confirmed. Putting politics aside for other venues, I thought it would be interesting to review several intellectual property cases from the 10th Circuit with decisions authored by Gorsuch.

Though patent issues would not have gone to the 10th Circuit (i.e., they are all appealed to the U.S. Court of Appeals for the Federal Circuit), it's worth pointing out that Judge Gorsuch has expressed skepticism of what is known as Chevron deference: a principle of administrative law that requires courts to defer to interpretations of statutes made by those government agencies charged with enforcing them, unless those interpretations are unreasonable.

Ending Chevron deference, as Judge Gorsuch would like to do, would have enormous consequences for all agencies—including the United States Patent and Trademark Office. This result, which is currently being contemplated by Congress, would also reopen previously settled patent rulings based on the USPTO's interpretations of the America Invents Act.

El Encanto v. Hatch Chile

Last June 17, Judge Gorsuch authored the opinion in *El Encanto, Inc. v. Hatch Chile Company.* The dispute arose between these companies after Hatch Chile attempted to trademark the term HATCH for exclusive use relative to its chile pepper products. As Judge Gorsuch wrote: "The Hatch Valley may be to chiles what the Napa Valley is to grapes." That is no doubt why El Encanto objected in filings before the Trademark Trial and Appeal Board.

During the TTAB proceeding, El Encanto asked Hatch Chile to disclose the provenance of the chiles it used. Hatch Chile responded that it did not know, and that El Encanto should ask its co-packers and suppliers. Armed with that suggestion, El Encanto issued subpoenas under Federal Rule of Civil Procedure 45, which authorizes discovery from non-parties. Hatch Chile objected in federal court, seeking a protective order and a motion to quash. Hatch Chile argued that such a Rule 45 subpoena could only be used in conjunction with a deposition, which was not requested. The district court agreed.

Judge Gorsuch observed that this case was rather unusual. In the typical discovery battle, the fight is over whether one party



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seeks too much discovery—but here, the fight was about whether enough discovery was requested to warrant the use of a Rule 45 subpoena. Gorsuch explained that no one wanted a deposition; all that was requested were documents that answered a rather straightforward question. Ultimately, he ruled "a party to a TTAB proceeding can obtain nonparty documents without wasting everyone's time and money with a deposition no one really wants."

Meshwerks v. Toyota Motor Sales

In *Meshwerks, Inc. v. Toyota Motor Sales U.S.A., Inc.*, Judge Gorsuch authored an opinion on whether digital models are entitled to copyright protection. In this case, the facts showed that the models and their designs owed their origins to Toyota, and there was a deliberate choice not to include anything original of their own. As such, the 10th Circuit had little difficulty finding that the models in question were not original works of authorship entitled to copyright protection.

In approaching the answer to the question presented in Meshwerks, Gorsuch observed: "While there is little authority explaining how our received principles of copyright law apply to the relatively new digital medium before us, some lessons may be discerned from how the law coped in an earlier time with a previous revolution in technology: photography." Gorsuch explained that photographs are copyrightable to the extent that they offer an original depiction of the subject, which can include a photographer's choices regarding pose, lighting, shading, positioning and other elements of composition. Armed with these lessons, Gorsuch concluded, "Meshwerks' models are not so much independent creations as (very good) copies of Toyota's vehicles."

Ending Chevron deference, as Judge Gorsuch would like to do, would have enormous consequences for all agencies—including the United States Patent and Trademark Office.

Views on vast regulatory powers

With respect to Chevron deference, last August 23 Judge Gorsuch wrote a concurring opinion in *Gutierrez-Brizuela v. Lynch*, which substantively relates to an order from the Board of Immigration Appeals. Gorsuch wrote that he thinks it is time to address the elephant in the room—namely, that Chevron deference is inconsistent with the Constitution because it deprives the judiciary of the power to review agency actions and interpretations. He explained:

"There's an elephant in the room with us today. We have studiously attempted to work our way around it and even left it unremarked. But the fact is, Chevron and Brand X permit executive bureaucracies to swallow huge amounts of core judicial and legislative power and concentrate federal power in a way that seems more than a little difficult to square with the Constitution of the framers' design. Maybe the time has come to face the behemoth."

Gorsuch went on to write that the Founders thought "separation of powers to be a vital guard against governmental encroachment on the people's liberties..."

Already, we have seen President Trump issue an executive order relating to the streamlining of the federal regulatory system, so the nomination of Gorsuch—who seems highly skeptical of the ever-increasing power of the federal regulatory system should shock no one. Further, on January 11, the U.S. House of Representatives passed the Regulatory Accountability Act of 2017, which in part would modify the scope of judicial review for agency actions. If passed by the Senate and signed into law by President Trump, the act will authorize courts reviewing agency actions to decide all relevant questions of law de novo without giving deference to the agency's interpretation. Passage of the Regulatory Accountability Act of 2017 would, in essence, do away with Chevron deference and thereby significantly open the door for the federal circuit to reconsider all of the patent office's interpretations of the America Invents Act.

Although one's view of Judge Gorsuch will no doubt be informed by many different aspects of his judicial philosophy, having a justice on the Supreme Court who is openly skeptical of vast federal regulatory powers insulated from any judicial review would seem to bode well for patent owners. $\hat{\mathbf{v}}$

Confusion Over USPTO Power a Weird Scenario

SILENCE BY AGENCY, TRUMP, COMMERCE IN NAMING A DIRECTOR OPENS DOOR FOR PROBLEMS **BY GENE QUINN**

Editor's note: This story and commentary was written three weeks after Donald Trump was sworn in as president. The author's stance about the uncertainty in the United States Patent and Trademark Office remains unchanged, even if a director was named between the time of writing this article and its publication.

or weeks after Donald Trump was sworn in as president of the United States, the question persisted: Who is running the United States Patent and Trademark Office? It seems the Trump Administration chose to sequester the director as if he or she has gone into the witness protection program, declining comment since Trump took the oath of office.

It is mind-boggling that no one could conclusively say with any certainty who is director, whether there is an acting director, or whether the commissioner for patents is carrying out the responsibilities of director without being named acting director—the latter which has happened at least once in the past. Although sources told me in February that Michelle Lee continued to be seen on the 10th floor of the Madison Building, where the director's office is located, there was no comment about who the director is, and a variety of mixed signals had been sent.

Late notification unusual

This scenario has been bizarre and extremely unusual. The USPTO has always been very good about notifying the public about changes to the leadership hierarchy. After all, U.S. patent laws place certain specific responsibilities and discretion in the hands of only the director.

Weeks after Trump's inauguration, the leadership page on the Department of Commerce website continued to list the position of Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office as "vacant." We also know that the executive biographies page on the USPTO website continued to list Lee under the aforementioned title. We also know that Lee canceled multiple speaking engagements, including one that was to take place in early February at a NASDAQ-sponsored event in San Francisco; John Cabeca, director of the Silicon Valley regional office, spoke in her place.

Having said this, we also know that the USPTO executive biographies page is not always up-to-date.

Challenges may loom

The intrigue surrounding Lee and who is running the USPTO went from gossip and curiosity to something quite serious.

U.S. Code Title 35, Section 153 says that upon issuance, patents "shall be signed by the Director or have his signature placed thereon..." Sources tell me that the USPTO was prepared to issue patents with the signature of Drew Hirshfeld, who is the commissioner of patents and seemed to be in the position of acting director. At the last minute, however, a decision was made to revert back to Lee's signature. This creates several significant problems.

First, if Lee is not currently the director, patents that are being issued with her signature are being issued in violation of Section 153. If we know anything about patent litigators it is that they raise every challenge possible, and it is only a matter of time before the provenance of patents issued during these first weeks (and maybe months) of the Trump Administration are challenged as being invalid. I don't really suspect such an invalidity challenge to ultimately prevail, but how many patent owners are going to have to spend many tens of thousands of dollars to fight such a challenge to the very existence of their patents? Fighting this type of challenge is both unnecessary and ridiculous, but extremely predictable.

Second, if my sources are correct and there were preparations to issue patents with Hirshfeld's signature, that clearly means that at least some USPTO employees have at least some reason to believe that Lee is no longer the director.

Third, if there was a decision to revert back to Lee's signature, that would suggest that those working for the USPTO believe Lee may not be the director but are not entirely sure who holds the director's authority. This internal uncertainty has been confirmed by numerous reports I've received. How is it possible for any entity to run when everyone from patent examiners to senior-level career officials have no idea who is in charge?

What a mess! 🕏

Is Michelle Lee still in

as director, or out? At one point, Drew Hirshfeld seemed to be in the position

of acting director.

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INVENTIVENESS

It Could Happen

So maybe you're rethinking the decision to get that nonconformist barb-wire tattoo, which actually turned out to be ubiquitous (not to mention how it's going to look down the road with some wrinkles in it).

PhD student Alec Falkenham at Dalhousie University in Halifax, Nova Scotia, invented a tattoo-removal cream that delivers drugs to white blood cells called macrophages, making them release the ink they took up in order to protect your skin during tattooing. Cipher Pharmaceuticals, which bought worldwide rights to the cream last year, said the investigational process could be a viable alternative to the cost and pain of laser treatments.

Experiments on pigs' ears have been encouraging. However, the process of clinical trials and other regulatory hurdles could mean it'll be 5-10

years before the product goes on the market.



What IS that?

It's exactly what it says it is. The better question: Why is that? Sapporo Breweries Limited, founded in 1876, sells diet water that purportedly contains specialized peptide bonds to seek out and wage war on fat cells in the bloodstream. When the company launched the product in 2004, Chairman Takao Murakami said: "My personal goal is to make as much money this year as George Clooney. ... I am younger and better looking than Clooney. I just need his bankroll now." Though the product is still around, there's no indication the chairman met his goal. But he hasn't tried selling diet air. Yet.

Wunderkinds

Still a teenager, **Andini Makosinski** has accomplished a lot with her keen scientific mind and curiosity. She created a flashlight that runs solely on the heat of the human hand, which won top prize (and a \$25,000 scholarship) in the 15-16 age category at the 2013 Google Science Fair. She was awarded a patent in January 2015; later that year she won \$50,000 from Shell for her E-DRINK cellphone charging mug, which uses hot water's heat to funnel electricity to mobile devices. Now attending the University of British Columbia, she has appeared twice on "The Tonight Show With Jimmy Fallon" to demonstrate her inventions.

\$17.2 million

The amount of money the NCAA paid to sports and entertainment marketer Intersport in 2010 to stop using the term "March Madness"—which has been associated with the NCAA's Division I men's basketball tournament since the 1980s. The NCAA's list of registered trademarks includes The Final Four, Final Four, Final 4, F4, The Road to the Final Four, Road to the Final Four, And Then There Were Four.

WHAT DO YOU KNOW?

True or false: Folk singer Woody Guthrie, whose song "This Land Is Your Land" was copyrighted in March 1956, was related to folk singer Arlo Guthrie.

2 William Hartman was issued a patent for a method and apparatus for painting highway markings (stripes, etc.) on March 15 of which year:

A) 1928
B) 1941
C) 1951
D) 1994

Which was invented first: The collapsible (breakaway) basketball rim, or Gatorade?

True or false: The Constitution of the Confederate States of America established a patent office.

5 Which invention is not attributed to the Irish?

- A) Portable defibrillator
- B) Hypodermic syringe
- C) Rubber soles
- D) Chocolate milk
- E) All were invented by the Irish

ANSWERS

1) True. Arlo Guthrie is Woody's son. Arlo's most popular song was "City of New Orleans," his only Top 40 hit (1972). 2) D. 3) Gatorade was developed by University of Florida researchers in 1965; the collapsible rim was invented in 1976 by Arthur Ehrat, who added a hinge and a spring from a John Deere cultivator to a rim that basically allowed the iron ring to bend slightly and snap back into place. 4) True. March 21, 1861. 5) E.



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