

Inventors

DECEMBER 2017 Volume 33 Issue 12

DIGEST

THEIR WORK IS
**NEVER
DONE**

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FROM PAST STORY SUBJECTS

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MAY HELP END SOME DISEASES

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Anyone Can Play, Anyone Can Win

On November 16, Major League Baseball named its most valuable players for 2017 in the National and American leagues. The N.L. winner, Giancarlo Stanton of the Miami Marlins, slammed 59 home runs and stands 6 feet 6 inches tall. The A.L. winner, Jose Altuve of the World Series champion Houston Astros, excelled in virtually every facet of the game and is a full foot shorter at 5 feet 6.

There has never been an MVP in the major leagues who is taller than 6 feet 6 inches; there has never been an MVP who is shorter than 5 feet 6 inches. The 2017 awards underscored the fact that baseball is a pastime where anyone can play, and excellence comes in many forms.

On that same day, *Time* magazine released its 25 Best Inventions of 2017. They included Jibo, described as a robot that "seems downright human in a way that his predecessors do not." (The makers of Professor Einstein, to name just one, may disagree.) Electronic glasses called eSight 3 give sight to the legally blind. Halo Top ice cream, with no more than 360 calories per pint, recently became the best-selling pint ice cream in America. And then there's Thyssenkrupp MULTI, a system of elevator cars that can travel sideways and in multiple directions, possibly changing the way buildings are constructed in the future.

Jibo was created by Cynthia Breazeal, a mother and MIT lab leader. eSight 3 was developed by eSight, a company with worldwide offices whose mission is to help people with vision impairments. Halo Top is the creation of Justin Woolverton, a Los Angeles lawyer who started his healthful pursuit with a \$20 ice cream maker. And Thyssenkrupp MULTI was invented by Thyssenkrupp, a German company that manufactures elevators.

Just as with the baseball awards, the innovations making *Time*'s list prove that when it comes to inventing, anyone can play. And excellence comes in many forms.

This premise is borne out in every issue of *Inventors Digest*. This month, we're getting you caught up with some past story subjects who not only overcame the many obstacles to inventing and shared their inspirational success stories, they're continuing to grow and learn. They champion the innovative spirit with ingenuity and uncompromised standards.

But their most important attribute may be perseverance. Giancarlo Stanton and Jose Altuve personify this, given that only one-half of 1 percent of all high school senior boys playing interscholastic baseball will eventually be drafted by an MLB team—with no guarantees they will ever make it to the big time. Inventors also face massively long odds, with only 2 percent to 3 percent of all patented items ever making it to the marketplace—with no guarantees they will make money.

So the people on this month's cover are a rare and distinguished group, symbols of hope and optimism as we end 2017 and welcome a new year. Join us in celebrating what they have accomplished and what they will accomplish next.

—Reid
(reid.creager@inventorsdigest.com)

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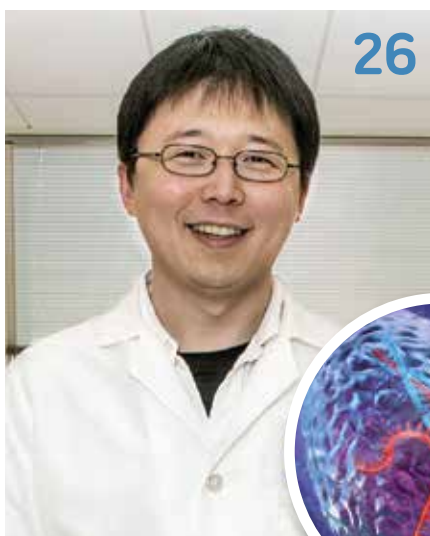
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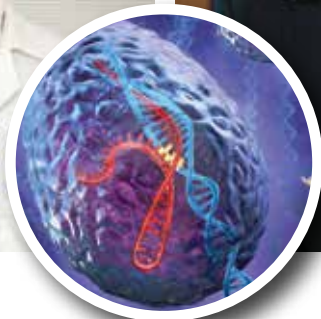
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Photo illustration
by Jorge Zegarra.



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BRIGHT IDEAS

Laika

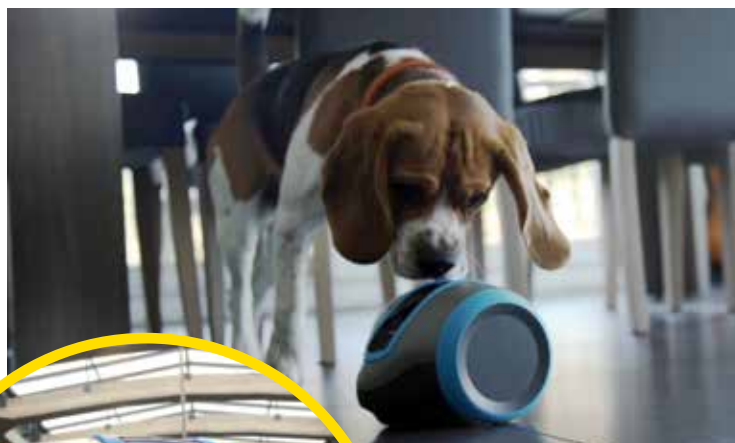
INTERACTIVE DOG COMPANION

camtoy.fr

This AI technology (with a chew-proof design) allows you to watch, talk, play and reward your dog from your smartphone, wherever you are.

Laika has two different play modes. Set it to self-play so your dog keeps occupied even when you aren't around, or take the controls and play with the dog yourself. It's the only companion that combines interactive play, a microphone, treat dispenser, live video and self-running mode all in one. Simply charge, connect and play. You can also detect whether your dog is barking, crying or whining when you aren't home.

All you need is a Wi-Fi hook-up—no SIM card. The planned retail price is \$500, with an estimated June shipping date to crowdfunding backers.



Kleverness

SMART LIGHTING SYSTEM

kleverness.com

With Kleverness, you can fully automate your home's lighting as well as control everything remotely, with no modifications or special bulbs.

Kleverness's overall goal is better performance at a better price than every other smart switch and dimmer on the market. You control the system via smartphones, wearables, tablets, laptops and desktops; no Wi-Fi necessary.

The system allows you to monitor your energy consumption, saving you money. Each switch can control up to three switches, with easy DIY installation. You can set the system for specific dates and times or put it in vacation mode to mimic your usual lighting schedule.

The suggested retail price of \$240 includes one Klever hub, switch, dimmer, outlet, and lifetime membership to the Kleverness subscription service. Estimated delivery is May.

SOLOSOCKS 2.0

DIFFERENT BUT MATCHING SOCKS

uru.dk/solosocks/

No more looking for a lost companion to one sock, or having to pair socks after washing. SOLOSOCKS are designed to mix and match, so just grab any two and they will go together even if not a perfect match. This also prevents wasting socks.

Each package of new Danish-inspired designs in the 2.0 version contains 7-by-1 single socks. Last year, SOLOSOCKS for Kids was successfully funded on Kickstarter.

Because the socks are made of natural organic cotton, they cannot be washed in water that is warmer than 40 degrees Celsius.

Retail prices for the 2.0 version were not immediately known, but the original SOLOSOCKS retailed at \$34 for a group of five, and \$45 for seven socks. The 2.0 version is expected to be shipped in January.



“Invention, my dear friends, is 93% perspiration, 6% electricity,
4% evaporation, and 2% butterscotch ripple.”

—WILLY WONKA IN “CHARLIE AND THE CHOCOLATE FACTORY,” BY ROALD DAHL

Mizu

SMART TOWEL

kickstarter.com

A bacteria-detecting towel, Mizu features color-changing strips that detect residual soap, dirt, sweat and bacterial metabolites. Made from premium Xinjiang cotton, it bills itself “the softest and most durable towel ever.”

Among the towel's other features: a twisted yarn weave to maximize durability and softness; proprietary technology to dry three times faster than the average towel; hyper-absorbent, able to hold five times its weight in water; low lint and piling.

The 56-by-30-inch bath towel (50 percent bigger than the average towel) will retail for \$100; the 30-by-20 hand and gym towel, \$50; and the baby towel (8-by-8) and bib, \$40. Shipping was to begin in December.



Refrigeration History: The Gorrie Details

FLORIDA DOCTOR'S INVENTION WAS UNVEILED
AT SUMMER BASTILLE DAY RECEPTION **BY MILTON AMMEL**

For many thousands of years, humans have tried to find ways to keep food cold and preserve it. Until fairly recently in history, the only method was by cutting and storing ice in the winter, then using the supply in the summer by trying to keep things cold.

Most people know we had mechanical refrigeration starting in the 1920s, but the history of the modern refrigerator goes back much farther. There is some evidence that ancient Egyptians and other civilizations understood the principle of evaporative cooling; the concept of mechanical cooling is, of course, more recent.

One of the more notable attempts at refrigeration was a device called the Gorrie Ice Machine. A 2008 article on wired.com notes that Dr. John Gorrie was a Florida physician who was ahead of his time in many ways. Though the causes of yellow fever and malaria were still unknown in the 1850s, "...Dr. Gorrie knew they relied on heat and moisture to propagate. He urged the draining of swamps and the enforcement of hygiene in the town's food market."

Dr. Gorrie also understood that temperature control affected how fast his patients would recover—and whether they did at all. He used ice water suspended in pans, allowing the cool air to flow downward on his patients. But ice was expensive and not very practical in the hot Florida summers.

In a statement believed to date to the 1840s, Dr. Gorrie wrote, "if the air were highly compressed, it would heat up by the energy of compression. If this compressed air were run through metal pipes cooled with water, and if this air cooled to the water temperature was expanded down to atmospheric pressure again, very low temperatures could be obtained, even low enough to freeze water in pans in a refrigerator box."

By about 1845, Dr. Gorrie made a working model of a compressor/cooler that could run on wind, water, steam or animal power.

Dr. John Gorrie received the first U.S. patent for his method of artificially creating ice in 1851.



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'A miracle!'

July 14, 1850, was a momentous day in the history of refrigeration. On yet another hot summer day, Dr. Gorrie decided to attend a reception thrown by the French consul on Bastille Day.

Per *Smithsonian* magazine: "The doctor (Gorrie) first complained about drinking warm wine in hot weather, then suddenly announced, 'On Bastille Day, France gave her citizens what they wanted. (Consul) Rosan gives his guests what they want, cool wines! Even if it demands a miracle!'"

Dr. Gorrie then signaled for waiters to enter with bottles of sparkling wine on trays of ice—America's first public demonstration of ice made by refrigeration.

Dr. Gorrie received the first U.S. patent for his method of artificially creating ice in 1851. According to an article by George L. Chapel of the Apalachicola (Fla.) Area Historical Society (Dr. Gorrie served as mayor there in 1837), the invention involved a cooling process created by the rapid expansion of gases.

Although Dr. Gorrie's invention was an astounding success, it was a business failure. He met strong opposition from the traditional ice industry and, beset with a variety of troubles, died in 1855.

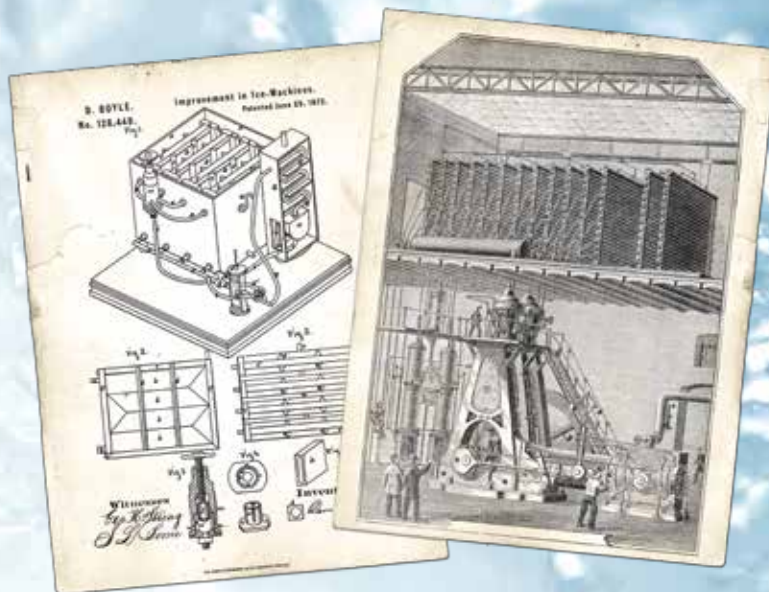
Refining the process

In 1878, a more practical ice-making device was invented that became the basis for the Boyle Ice Machine Co. in Chicago.

According to the 1901 book "Ice and Refrigeration," the company built a large number of ice-making and refrigerating machines. It continued in business under different names until 1890. The company's founder, Scotland-born David Boyle, died in 1891; "perhaps more than any one man, he had practically developed the type of refrigerating machine known as the 'compression ammonia.'"

Refrigeration went through many more developments. For one thing, early designs could be dangerous, given some of the chemicals used as refrigerants included ammonia, sulfur dioxide and methyl chloride. Household mechanical refrigerators were not ready for consumer use until the 1920s. ❖

Milton Ammel works as a radio reporter in Ottawa, Kansas, and researches various historical topics as a hobby.



An ammonia-compression ice machine was invented in 1878.

A statue of the doctor appears at the John Gorrie Museum State Park in Apalachicola, Fla.

So, who invented the refrigerator?

When it comes to the refrigerator, identifying the father is a little like an episode of "Maury."

According to many Florida historical accounts—including the Florida Inventors Hall of Fame—Dr. John Gorrie invented the ice-making machine and is considered the father of air conditioning and refrigeration.

Other accounts differ, and earlier innovations further cloud the issue. American inventor Oliver Evans designed a refrigeration machine that used vapor instead of liquid in 1805, and in 1820 English scientist Michael Faraday used liquefied ammonia to cause cooling.

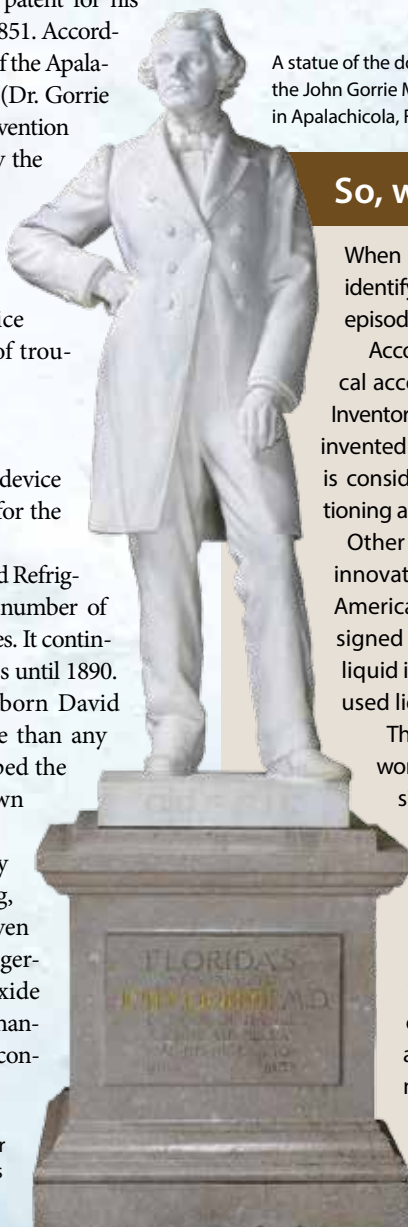
The History of Refrigeration says that Jacob Perkins, who worked with Evans, received a patent for a vapor-compression cycle using liquid ammonia in 1835—and for that, "he is considered the father of the refrigerator."

Then there's this from the oft-cited but not always reliable Wikipedia: "The history of artificial refrigeration began when Scottish professor William Cullen designed a small refrigerating machine in 1755. Cullen used a pump to create a partial vacuum over a container of diethyl ether, which then boiled, absorbing heat from the surrounding air. The experiment even created a small amount of ice, but had no practical application at that time."

So the true inventor of the refrigerator is either a matter of opinion, or a dead heat. —Reid Creager



Jacob Perkins



Christmas Tree Inventions



The venerable Christmas tree has been associated with some fun, useful and downright weird inventions through the years. A special thanks to Vox Media for compiling some of these golden treasures from the archives of the United States Patent and Trademark Office:

Christmas tree trash bag: But wait! There's more. U.S. Patent No. 3,729,039, granted on April 24, 1973, references not just a trash bag but an item with three stated uses:

"One of the objects of the present invention is to provide a means whereby the carcass of a Christmas tree may be removed from the inside of a house without leaving bunches of pine needles scattered throughout. Another object of the present invention is to provide a decorative ground cloth around the base of a Christmas tree to gather falling needles, rosin, and gum and to keep same from ruining the floor beneath the tree. Still another object of the present invention is to provide a container for enveloping a Christmas tree

when it is to be disposed of, which container will also function as a decorative base around the Christmas tree during the period when the Christmas tree is in use."

Sounds like some of those utilities overlap. But if you're a sap for holiday tree gadgets, this one would have to be near the top of the list.

Tinsel dispensing gun: Filed under "Devices for dispensing tinsel and the like adaptable for decorating christmas (sic) trees," Patent No. 3,494,235 was granted on Feb. 10, 1970.

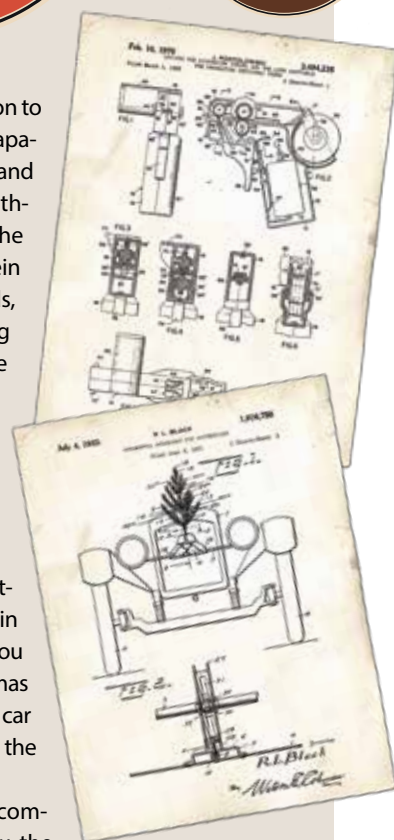
The invention filing says, "Upon the pressing of a spring-(based) element which may be the trigger of a gun-shape, tinsel issues through the muzzle from off a supply roll mounted at the stock." There is also a cut-off blade.

The application goes on to say: "This invention is capable of numerous forms and various applications without departing from the essential features herein disclosed." In other words, if you feel like shooting tinsel on Grandpa while he's sleeping, have at it.

Christmas tree hood ornament holder: Maybe the wackiest item of all, it somehow fits that this invention was patented on the Fourth of July in 1933 (No. 1,916,750). You "simply" attach a Christmas tree to the hood of your car and hook up the lights to the car's battery.

The patent's lengthy, complex description of how the tree is affixed would make you pine for a quiet Christmas Eve assembling bicycles for a family of 11. Although there is not even a nod to whether the invention meets local, state or national safety requirements, it's obvious that inventor Ray L. Black and any attorney associated with this endeavor were serious about making it happen. —Reid Creager

For some design patents related to Hanukkah, see a past blog post by IPWatchdog editor Gene Quinn: ipwatchdog.com/2009/12/14/holiday-patents-hanukkah-chanukah-patents



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Is Entrepreneurship in Your Future?

SIX QUESTIONS CAN HELP DETERMINE THE ANSWER

BY JACK LANDER

The fundamental decision facing the inventor is whether to produce and market his or her invention, or patent and license it. This decision depends largely on the personal traits of the inventor and especially his answer to the following questions:

- The inventor personality ranges from true inventor to intense entrepreneur. Where are you on this spectrum?
- Which is more important to you, money or glory?
- Do you have adequate financial resources?
- Will you be dependent on your day job to keep your living costs paid?
- Do you know manufacturing processes?
- Will you produce in the United States or Canada, or will you use an off-shore source?

There's more to it than that, of course. But you can decide whether you should be an entrepreneur or remain an inventor if you answer those six questions honestly. Some things to consider on each point:

1 Inventor or entrepreneur? I've been studying the characteristics of true inventors for many years, and here's how I sum up the guy or gal who comes up with two new ideas each day before breakfast.

This person has a messy desk or workplace. His or her priorities are inventions, and maintaining a neat workplace is thought of as time taken away from the important work. This person has forgotten appointments in the past and will do so again. His or her cell-phone is a flip top. If this person has a tablet, its glass is cracked. Work starts on a new invention before resolving the fate of the last one. He or she is sometimes late paying bills that got lost under the mess on the desk.



Now, let's look at the true entrepreneur. He or she has an iPhone that answers question in voice. This person never forgets an appointment or is late for one. His or her desk is neat, but the person is not OCD about it. He or she is less concerned about the nature of the invention to take to market than about the thrill of having strangers purchase the product. He or she may aim to build a company for five years or so, sell out, and start again with a new product.

These are extreme examples, of course. Most of us lie somewhere between the center and the inventor end of the spectrum. But if you are closer to the inventor end than the center, you might not succeed as an entrepreneur. A start-up is a challenge, even if you are more entrepreneur than inventor. But if you are a dedicated inventor, you may find it difficult to maintain the entrepreneurial discipline that is required for success.

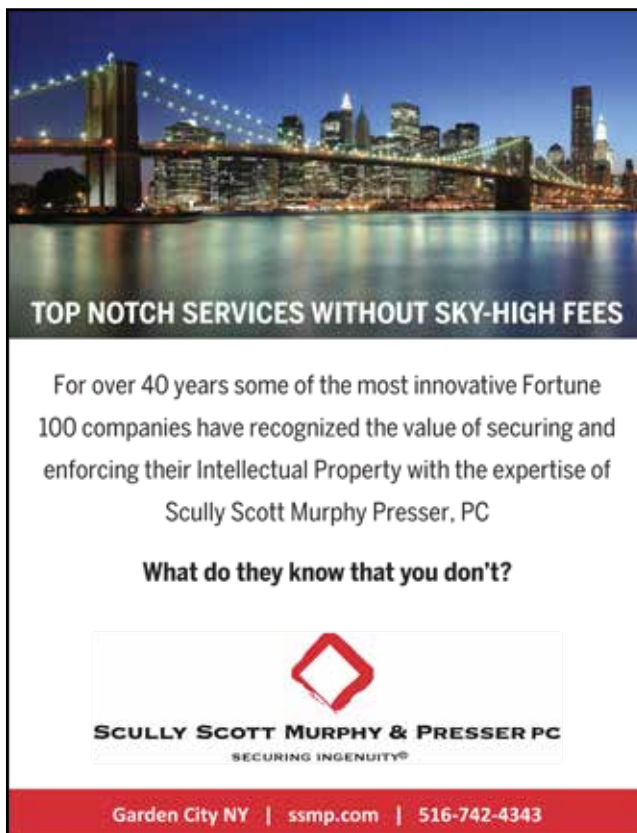
A start-up is a challenge, even if you are more entrepreneur than inventor.

2 Money or glory? I've asked many inventors to decide which of two alternatives they would prefer: making a lot of money, or having fame and honor. Fame and honor had the edge. When a true inventor does want money, it's usually so that he can pursue inventing more effectively. But without an eye on profitability and cash flow, an inventor who turns entrepreneur will often find himself in financial trouble and may have to give up his dream.

The entrepreneur, on the other hand, may like a bit of glory—but he or she is more concerned about earning money and growing a business. The invention need not be his or her own; the larger concern is that it can be sold and earn a profit. Money is a way of proving the dream was valid, of keeping score, more than it is the means to buy grown-up toys and drive a luxury car.

3 Adequate financial resources? Although this is an obvious question, many inventors and would-be entrepreneurs don't form a good plan for setting up. Tooling is often the killer.

For example, one of my clients needed a plastic injection mold about the size of a file storage box. He was shocked when I told him the mold for such a part would probably cost in the neighborhood of \$100,000. There was no way he could raise that much money, even from friends and relatives, due to the uncertainty of the unproven success of his invention.




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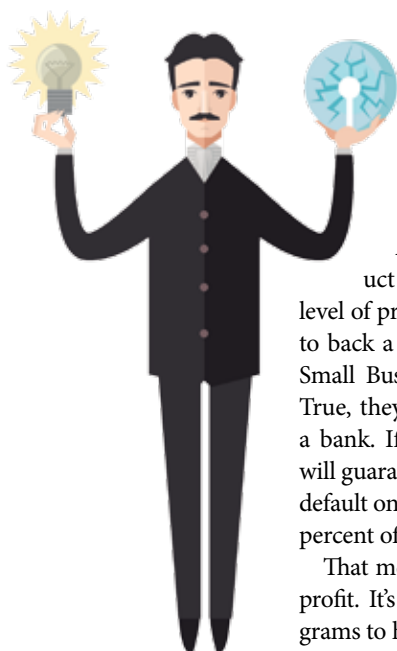


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Be true to your call in life. If that call is inventing, you are not likely to find fulfillment as an entrepreneur.

Another inventor has been selling her product for a few years but can't step up to the next level of production because she doesn't have collateral to back a bank loan. Some inventors believe that the Small Business Administration will back their loan. True, they will, but you must first get approval from a bank. If the bank approves your request, the SBA will guarantee about 80 percent of the loan in case you default on paying it back. So the bank stands to lose 20 percent of its loan if you go belly up.

That means that you have to have sales and show a profit. It's Catch-22. However, some states have programs to help inventors financially. Check it out.

Theoretically, angel investors are waiting for promising new products in which to invest. But most angels are sharks. That is, like the investors on Shark Tank, they want to see a sales history and know the selling-price to cost-to-produce ratio. It's rare that an angel will finance an invention that is not yet in its production phase.

With a typical utility patent costing about \$10,000 today—often more—consider forgoing your patent and using this money for all of the other start-up expenses. If you have competition later, when your product is selling well, the entry of such a competitor in the market may not be detrimental. A competitor helps to popularize the product, and it often happens that both producers gain sales. And if sales are not high, you probably won't have any competition.

4 Keep day job while starting up? A start-up is demanding of time. Unless it is penny ante and you're doing it for a small income on the side, you'll almost certainly have to devote full time to getting started and building your market.

5 Manufacturing processes? To plan your start-up costs, you'll need to become an expert in manufacturing processes. Some products can be farmed out at minimal NRE (non-recurring expense, or non-recurring engineering).

Suppose you invent a product made from cloth. You purchase it from a vendor who specializes in custom-sewn items. Your vendor already has the sewing machines and hand tools needed for your job. You will still have to pay for the initial bolts of cloth, thread, special hardware, etc. But you won't have to invest in NRE.

If your invention will be made of stamped steel, your vendor already has the stamping machine (punch press). But the die-set is custom made. Tool-and-die

designers and tool makers are well paid, and a die for even a small product might cost \$10,000 or more—much more for a “progressive die,” which has several stages, bends the part and ejects it automatically.

The sensible approach is to hire an industrial designer to select the production process and kind of tooling needed for your anticipated production volume. For most processes, there are several appropriate machines that range from labor intensive and general purpose to semi-automatic, computer driven, and even to robotics. As your volume grows, the economic machine will produce each unit a reduced cost but will require an investment in NRE.

Industrial designers specialize, so be sure to find one that is experienced in manufacturing your kind of product and is capable of 3D CAD design. You might also visit the bookstore of your nearest tech college and find a good book or two on manufacturing processes.

6 Produce in the U.S. or Canada, or off-shore? China, India and Mexico offer low labor costs relative to U.S. and Canadian factories. We'd all love to support U.S. vendors, but the market generally determines your choice. If you can't produce at a cost that results in a price your customers will pay, you may find that off-shore manufacture is your only option.

In conclusion: Half a century ago, psychologist Abraham Maslow created a hierarchy of human needs that is often illustrated as a pyramid. At the top is self-actualization. In his book “Toward a Psychology of Being,” Maslow said:

“Self-actualization is based upon the unconscious and preconscious perception of our own nature, of our own destiny, of our capacities, of our own ‘call’ in life. It insists that we be true to our inner nature, and that we do not deny it out of weakness or for advantage or for any other reason.”

Be true to your call in life. If that call is inventing, you are not likely to find fulfillment as an entrepreneur. 📌

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.





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Facebook Ads Can Help Your Launch

PROGRAM ALLOWS YOU TO TIGHTLY TARGET A SPECIFIC AUDIENCE AND IS COST EFFECTIVE **BY ELIZABETH BREEDLOVE**



For the entrepreneur, inventor or small company hoping to launch a new product, Facebook Ads is an online platform that provides a great, inexpensive opportunity to make the product a success from the beginning.

Take the Shape Flexer sun hat. Damien Henning created this after finding himself disappointed with poor-quality sun hats that didn't hold up to the demands of his global travels. He initially created these hats for himself, but after enough people asked where they could get one, he realized there might be a market for the hats and decided to try to mass produce and sell them.

This past June 20, Henning launched a 60-day campaign on Kickstarter for the Shape Flexer. By the time the campaign closed, it had raised \$247,564—707 percent of the project's initial \$35,000 goal.



Henning credits a large portion of his success to Facebook Ads, the source of 36 percent of contributions during the campaign. Facebook Ads is beneficial for those looking to launch a new invention for many reasons:

- **It makes it easy to collect leads before you launch a new product.** When you're launching a new product, collecting information for those interested in your product as soon as possible is key. Fortunately, Facebook's lead generation ads make this easy. Even if you haven't built a website or landing page, as long as you have a Facebook page for your product and some good photographs of your product you can begin collecting email addresses and other information of those who may buy your product down the road.
- **It allows you to tightly target a specific audience.** If you're working on a specific invention or product, you probably have a fairly good idea of the demographics of your target audience. Facebook Ads allows you to easily target this audience but test other audiences as well. Once you begin testing, you may be surprised by what you find.

For example, Henning initially thought his sun hat would be a hit among those who loved the outdoors. But when he started running Facebook Ads, he found that wasn't necessarily the case.

"I thought that that was my main audience, but the more I looked into it, I was getting a lot of people that weren't really avid outdoors recreational enthusiasts. They just wanted a good sun hat that they can manipulate and carry around easily and they liked the look of mine," he said.

- **It is inexpensive compared to other paid media opportunities.** If you're on a tight budget, Facebook Ads are a cost-effective way to get your product in front of a large number of people. Compared to other paid opportunities online, Facebook Ads cost considerably less. However, if you have no

36 percent of Damien Henning's Kickstarter contributions for his Shape Flexer sun hat came from Facebook Ads.



© SHAPE FLEXER

experience with online advertising, find someone who does to help you get the lowest cost per click.

- **It allows you to re-target those with whom you've already interacted.** Let's say someone comes to your website, signs up for your email newsletter, but doesn't purchase anything. With Facebook Ads, you can reconnect with that person through his or her Facebook News Feed. Just upload your customer list as a Custom Audience and use it to run a re-marketing campaign.
- **You can build Lookalike Audiences from pre-launch leads, email lists and re-targeting.** Facebook Ads' Lookalike Audiences is a powerful tool that

allows you to upload a custom Audience—the leads you collected prior to launching, for example—and then use the Custom Audience to create a Lookalike Audience with similar demographic information or interests. This is key, because it allows you to reach people you may never have otherwise targeted. 📌

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



Types of Facebook Ads

How can you make the most of Facebook Ads? When you're beginning to use it to promote a product, it's important to understand the different types of ads and when to use them to get the best return on investment.

Carousel ads: Also known as Dynamic Product Ads, these are great if you want to feature multiple products, or if you want to highlight several features of a single product. However, some extra creativity is needed to tell a good story and make these ads truly effective; you'll need to make your content noticeable enough that viewers want to engage and interact with it.

Video ads: Video ads are great for grabbing your viewers' attention or making your content go viral. However, this comes at a price, as they are not as effective for sending traffic to your website.

Lead generation ads: As mentioned above, lead generation ads are very effective for hosting giveaways or collecting leads for a product or service. If you have not yet launched your product but you want to begin to promote it, lead gen ads are the way to go.

Right rail ads: These small ads are located in a column on the right of the newsfeed for desktop users. They have more limitations on wording due to their size, but they are very effective and have high conversion rates.

Standard ads: This is the typical type of ad you probably see in your News Feed hundreds of times a day. It's good for just about every purpose, but because it is so universally useful, the competition for these ads is a bit higher. Because of this, it's important to optimize your Standard ads in order to make them stand out from everything else in the News Feed. If you aren't sure where to begin, ads like these are a great place to start; in fact, these are where Henning saw the biggest ROI for his Kickstarter campaign.

With so many options, Facebook Ads may be a bit overwhelming when you first decide to use it, but Facebook has worked hard to simplify the process and make it easy to use and understand. If you're working on bringing your invention to market, Facebook Ads are a wonderful place to begin.

There's No Stopping His Drain Products

HAIR-CATCHING PRODUCT LINE A HIT WITH ONLINE AND MAJOR STORE RETAILERS **BY EDITH G. TOLCHIN**

Every so often if a product seems useful and helps to solve a problem I might have at home, I try it out while interviewing the inventor. I'm sure many of you can relate to hairy gunk piling up in your drains—especially if you are a pet owner—so I was curious.

Serge Karnegie invented tub and sink drain products the TubShroom®, SinkShroom® and ShowerShroom®. All of them accommodate 1.5-inch tub drains, 1.25-inch sink drains and 2-inch stand-up shower drains, respectively.

My observations after using the products:

TubShroom—It's important to note that you cannot take a bath with the TubShroom in place. If you want to take a bath, remove the TubShroom (very easy!) and put in a drain stopper to hold the water. After your bath, remove the drain stopper and quickly replace the TubShroom to catch the hair and other gunk before it goes down your pipes with the bath water.

SinkShroom—Make sure you start out with a clean, free-flowing drain. My bathroom sink tends to run slowly so I found that after I removed the regular stopper and inserted the SinkShroom in place, the drain ran even more slowly. But it did catch hair.

ShowerShroom—My husband uses the shower stall and says the product worked quite well!

The 'Shroom products make great stocking stuffers, so they're perfect for holiday ordering.

Edith G. Tolchin (EGT): Serge, tell us about your inventing background.

Serge Karnegie (SK): When I was about 13, my father enrolled me into a so-called electronics hobby club center, where later I came up with my own video game. Although primitive by today's standards, it was considered a huge achievement by fellow students and our teacher. It was considered an invention by everyone.

Later, I created an improvised teleprompter. My mother was a news anchor at a local TV station. It was a huge hit, since the news was read off paper. I guess I should have pursued a career in the tech world, but I ended up in sales and marketing.

EGT: Tell us more about what's needed to use the TubShroom, the original product in your line.

SK: The TubShroom is intended for use in bathtubs, or any drain that's 1.5 inches to 1.75 inches in diameter. But to take a bath, a user has to use a stopper. There are many stopper options on the market that work just fine.

In walk-in showers, however, the drain diameter is 2 inches. We came out with a unit earlier this year that accommodates such drains. We call it the ShowerShroom.

EGT: How many prototypes did it take until you got the right one for the TubShroom?

SK: I made the very first prototype using a piece of a PVC pipe and some rubber. It was a perfectly functioning unit, for what it was intended. Then CAD design was made according to specs of the prototype. The first silicone prototypes were perfect right off the bat and needed no tweaking. We were ready for production.

EGT: Tell us about your crowdfunding experiences.

SK: I think that was one of the most exciting parts of the venture. (The TubShroom campaign, launched in September 2015 with a \$12,000 goal, raised \$59,267 from 2,059 backers. The SinkShroom campaign, launched in July 2016 with a \$7,500 goal, raised \$67,159 from 2,383 backers. And last March, the ShowerShroom

Serge Karnegie invented tub and sink drain products the TubShroom®, SinkShroom® and ShowerShroom®.



“When you hit that Launch button and pledges start rolling in pretty much the same minute, the joy and excitement that overtake you is hard to describe.”

—SERGE KARNEGIE, ON HIS CROWDFUNDING EFFORTS



campaign beat its \$5,000 goal by raising \$21,963 from 754 backers.)

When you hit that Launch button and pledges start rolling in pretty much the same minute, the joy and excitement that overtake you is hard to describe. That's when you realize that your creation is being recognized and is very important for the creator. Other than that, it was a very interesting learning experience. Kickstarter backers are a very special community. I'm very thankful for them.

EGT: Are you manufacturing in the United States or overseas?

SK: We tried—or should I say, considered—manufacturing our products in the United States, but the cost of the materials and labor were just too much for a startup to bear. The decision was made to take it to Asia.

EGT: Tell us about your experience with your patents.

SK: We filed for a provisional utility patent early in the process to ensure that we would be protected in the event that the product took off. Likewise, for the design patent. We knew our product was unique enough that it could receive protection with the right patents.

The process isn't cheap, unfortunately, and we learned a lot from our lawyer about what approach made the most sense to protect our product. We have since filed in several foreign countries, where our product is already being sold.

EGT: Who designed your logo and packaging?

SK: I imagined all the artwork myself, then, to the best of my ability, made drawings and my designer made it look beautiful.

EGT: Are you selling only online now, or are you selling to retail?

SK: In the online space, TubShroom is enjoying tremendous popularity on Amazon. The almost five-star ratings have now surpassed 10,000 reviews. Outside cyberspace, at least one of our three products can be

found in such nationwide retail chains as Bed Bath & Beyond, Target, Lowe's, CVS, Ace hardware, Menard's, Boscov's and many more.

EGT: Any plans to add other products?

SK: Yes, we are currently in pre-production phase of our StopShroom™. It's a universal stopper that can be used in conjunction with our TubShroom and SinkShroom, as well as on its own in bathtubs, utility or kitchen sinks. It's an attractive and highly functional new product.

EGT: Have you encountered obstacles in developing your products?

SK: Yes. At some point, it turned out that the original design of the TubShroom was too complex, and it was too difficult—if not impossible—to create the tooling for it. Tooling is what they call a mold that's used to shape the final product.

Eventually the technicians figured out a solution, much to our excitement. That was a nerve wrecker because we already committed to a delivery date to our Kickstarter backers, which we absolutely did not want to miss. Fortunately for everyone involved, we were able to resolve it just in time and deliver on time.

EGT: Any words of encouragement you might offer our readers?

SK: If you have an idea for a product, don't give up. Give it a chance for success. It's an adventure worth taking. 🍀

Details: tubshroom.com

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



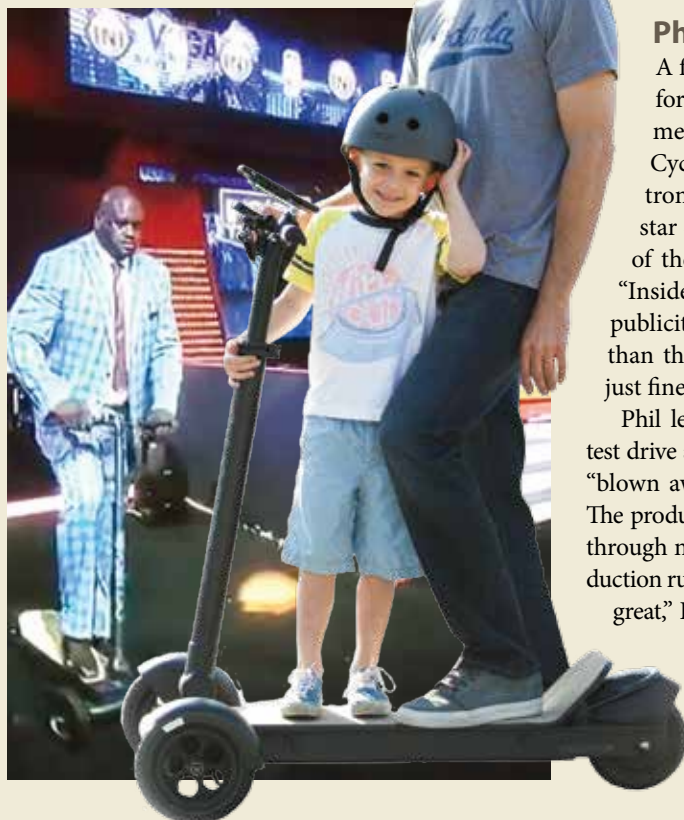
Old (and new) inventors never die; they just plug away.

The innovator's relentless determination is an enduring theme in *Inventors Digest*. Each month, we tell the stories of inventors and entrepreneurs—specifically, their successes and challenges in bringing an idea or product to market.

This journey is never-ending. It's a series of adjustments, refinements and growth that continues even after that first retail or licensing deal. So every story we tell on these pages is still developing after you've read it. And often, one invention leads to another.

The end of 2017 seems an appropriate time to get you caught up on some inventors from stories in recent years. Here is the latest on their adventures.

THEIR WORK IS NEVER



Shaquille O'Neal took the CycleBoard for a spin at this year's Consumer Electronics Show. Lincoln LaBonty knows that kids like it, too.

Phil LaBonty (CycleBoard)

A few months after interviewing Phil LaBonty for his November 2016 story, Jeremy Losaw met the California dad and his wife at the CycleBoard booth during the Consumer Electronics Show in Las Vegas. Former basketball star Shaquille O'Neal was at CES and drove one of the CycleBoards during filming of the show "Inside the NBA," which provided some great free publicity. Phil was worried that Shaq was heavier than the load rating of the board, but it survived just fine and Shaq became an instant fan.

Phil let Losaw take one of the CycleBoards for a test drive around the aisles of the show; he said he was "blown away" by how fun and easy it was to drive. The product is gaining market traction: "We have sold through nearly all of our 500 units from the first production run as quick as they have come in, so that's been great," Phil says. "There is significant demand in the marketplace for the CycleBoard, and people absolutely love the product." He said there will be a special announcement about the CycleBoard in January.

Velvet Alvarez (Math Game 2x3)

Velvet Alvarez and her mother, Isabel, developed this bilingual learning tool for kids to learn basic math in a fun way. Their main update since their April 2017 story by Edith G. Tolchin involves how the product is sold.

“Our company has been shifting towards selling on Amazon through Amazon Prime and working on a contract with a multinational retailing corporation and selling through them,” says Velvet, now a college senior with plans to expand her knowledge in microbiology and medicinal biology. “We have continued to sell through phone and online sales, as well as doing presentations at schools and education centers.”



DONE

Brandon Adams (left) now works with high-profile clients that include Kevin Harrington.

Brandon Adams (ArcticStick)

Our July 2015 cover story told of Brandon's struggle to bring to market a plastic, bullet-shaped tube that after being filled with water and frozen can be dropped into a plastic beverage bottle to keep liquid cold. (It also enables you to enhance your drink with any flavor.)

ArcticStick is now available on Amazon.com. Meanwhile, the self-professed “serial entrepreneur” has moved on to bigger things.

“My ArcticStick and crowdfunding journey led me to crowdfunding four more companies and also releasing an Emmy-nominated TV show called ‘Ambitious Adventures’” on which he is co-host and co-executive producer. The show is on the Entrepreneur Network and Facebook Watch.

Brandon is also the host of the influential business podcast “Live to Grind,” and has been the guest on more than 100 shows. He and his team at Accelerant Media Group work with high-profile clients such as Kevin Harrington, John Lee Dumas, the Napoleon Hill Foundation and others on successful crowdfunding campaigns, branding, PR and digital marketing.





“We did a Kickstarter project for our Power Bank that was successful, and we are selling more and more of them. We just recently signed a contract with Walt Disney Merchandise.” —BRENDA BRUNDAGE

Brenda Brundage (RooSport)

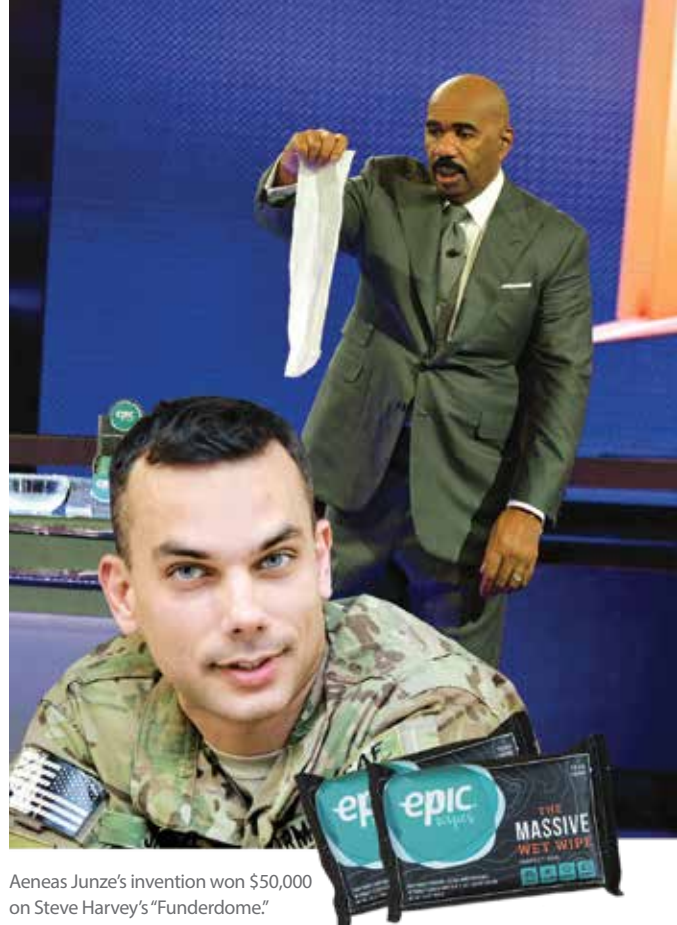
Brenda was featured in Jeremy Losaw’s story in the June 2015 issue. She is a mom and running enthusiast who was frustrated by the lack of pocket space in running shorts. To solve the problem, she invented a running pouch that folds over the waistband and latches to itself with magnets.

The idea was a hit with runners. When we last spoke with her, she was about to launch the RooSport 2.0 on Kickstarter—a bigger and improved version of the original. It was successfully funded, raising \$115,111. Then in late 2016 she came out with the RooSport PowerPocket, which adds a battery bank phone charger to the RooSport pouch. It, too, was launched via Kickstarter and raised \$33,812—her third successful crowdfunding campaign.

“Business has been terrific,” she reports. “After we were named a Top 30 running accessory by Runner’s World for three straight years in its annual buying guide, it listed us as one of the three most comfortable ways to carry the large Plus phones in the June 2017 issue!

“We did a Kickstarter project for our Power Bank that was successful, and we are selling more and more of them. We just recently signed a contract with Walt Disney Merchandise.”

Brenda Brundage has had help from her four daughters (including Stephanie, above right) and her husband.



Aeneas Janze’s invention won \$50,000 on Steve Harvey’s “Funderdome.”

Aeneas Janze (Epic Wipes)

The Army physician reports that the company received a huge break on September 17, when the towel-sized wet wipes were featured on Steve Harvey’s “Funderdome”—a seed-funding competition reality TV series—and won \$50,000. “Since the show aired, we’ve received some very promising attention from both wholesalers and retailers, as well as from several multinational distributors that we’re currently in negotiations with,” says the company founder.

Epic Wipes, reported on by Edith G. Tolchin in the November 2016 issue, has been available on Amazon.com since April of this year. “Our growth has been extraordinary, with almost every month showing a doubling—if not tripling—of the previous month’s sales,” Aeneas says. “We’re also now available online and in many retail stores throughout Canada, as well as select locations in the UK.”

Due to consumer demand, the company planned to come out with a smaller version of the wipe in November that is about 1 foot-by-2 feet, in addition to the flagship version (about 1.5 feet by 2.5 feet). These wipes are targeted for encumbrance-oriented customers such as long-distance hikers, runners and cyclists (and consumers who would just like to be able to squeeze more wipes into their purse or backpack).

“We also have a line of ‘everyday’ wipes scheduled to be released early in first quarter 2018. At 10 inches by 10 inches, these wipes will still be much larger than the average wet wipe but will not be part of our ‘shower’ line.”

Christina Martinez (WindowKitty)

Christina and her husband, Brian, came up with a cat window seat that allows a cat to enter into a cylinder and look out the window while leaving blinds unharmed. Edith G. Tolchin's story in the January 2017 issue mentioned that WindowKitty won the votes to be a QVC Sprouts product. (The program, now called QVC NEXT, provides an opportunity for entrepreneurs to grow their businesses.)

Says Christina: "Although we won, we had not met all of the requirements, such as third-party consumer product testing and QVC's own quality assurance testing. ... We had been selling WindowKitty through our website for almost a year and never had products damaged through shipping.

"Each one of our QVC products were destroyed in shipping. We had four chances to get the product safely to QVC. We did our own 'drop test' and increased the bubble wrap, as well as the size of the bubbles, and went with a larger box. Our final product was destroyed, and during the destruction the postage was removed. Because of this, it was returned to sender—to us! Thankfully, we received the product back and were able to ship our final product undamaged to QVC. We met QVC's requirements, and our product is available on QVC.com."

The couple have also responded to feedback that the WindowKitty should have a softer, more comfortable bed rather than a non-slip pad. "Due to the unique size and shape of our product, we couldn't find the right bed, and they were expensive," Christina says. "Brian created the WindowKitty® Anywhere Comfy Bed for our product, and it can go anywhere—not just in WindowKitty.

"He cuts, and I pin the fabric. Brian does all the sewing. ... We recently listed them on our website and have sold them at local adoption events and cat shows."

Craig Nabat (Freedom Laser Therapy)

For our October 2015 cover subject, it's still all about lighting the way. The feature detailed Craig's efforts to help people stop smoking via the Freedom Quit Smoking System—which uses high-frequency light and tranquil sound waves to instill the behavioral modifications needed to quit smoking—as well as the iRestore Laser Hair Growth System, which uses low-level lasers to stimulate dormant hair follicles.

Last March, *Star* magazine featured actor Anthony Andersen wearing the iRestore in the Golden Globes Gifting Suite (with Craig's *Inventors Digest* cover prominent in the background). In October, Freedom Laser Therapy announced the results of a clinical study that revealed 100 percent of men and women using the iRestore laser helmet showed hair growth, with an average increase in hair count of more than 43 percent.

The study was conducted by board-certified laser surgeon and American Academy of Dermatology member Dr. Adam B. Bodian, M.D. The 16-week clinical trial involved 40 subjects in a randomized, double-blind study using 20 active iRestore devices and 20 inactive, placebo devices.



Christina Martinez and her husband, Brian, have acted on feedback that sought a softer bed for their WindowKitty.

"He cuts, and I pin the fabric. Brian does all the sewing. ... We recently listed them on our website and have sold them at local adoption events and cat shows."—CHRISTINA MARTINEZ

Craig Nabat's Freedom Laser Therapy announced that in a recent clinical study, 100 percent of men and women had increased hair growth using the iRestore laser helmet.





“We look forward to selling an American-made product around the globe!” —JOSH SPRINGER

Josh Springer (Bottoms Up)

They always told Jeremy Losaw in school to “write about what you like.” Jeremy likes beer. He has written about three different beer innovations and is always on the lookout for more.

His favorite is the Bottoms Up beer dispenser, featured in the August 2015 issue, which uses magnetically sealed pint glasses and a special adaptor to fill kegged beer from the bottom of the cup to provide a faster and more consistent pour. Josh Springer almost went to jail on drug charges and used his time under house arrest to build the prototypes. The technology cuts wait times for beer lines and has been adopted at many major sports venues.

During the past two years, Josh has developed a series of line extensions. He launched a glass version of the Bottoms Up cup, which has been a hit with the craft brew community. He has also developed a whole line of home use Bottoms up dispensers including a kegerator, cooler with keg attachment, and a refrigerator conversion kit. He has also expanded his market reach outside the United States.

“We have expanded to 35-plus countries in the last two years,” he says. “We look forward to selling an American-made product around the globe!”

During the past two years, Bottoms Up has added a series of product line extensions and has expanded to 35-plus countries.



They (right) says his SUPflote, a flotation system for stand-up paddle board paddles, gives riders added stability.

They

The artist (another of his many talents) formerly known as Andrew Wilson continues to devote his life to innovating. The irrepressible holder of 14 patents is driven to create, especially for the benefit of humanity: “I’d like some of my projects in the public domain, projects that would help prevent injury or death. These things are larger than us.”

One of his more recent innovations is SUPflote, a flotation system for stand-up paddle board paddles. “It gives positive buoyancy to the paddle, giving the rider added stability,” he says. “Used to balance, this is perfect for beginners and leisure riders as well.

“This can also be used for flotation, adding safety, and the paddle can be used as a ‘step’ getting back on the board. Surf shops that rent SUP boards will not lose their rental paddles, as this can be easily seen even in surf.”

They is also involved in final-stage testing of a life-guard safety device, details of which he’s keeping close to the vest for now.

Reggie Senegal (Snaplaces)

A former triathlete, Reggie invented Snaplaces to provide a fast and supportive alternative to traditional sneaker laces. The innovation, which cut his triathlon time in the transition between the bike and the running events, is a hit with athletes. The product is also helpful for people with limited mobility who struggle to tie their shoes.

Since his interview with Jeremy Losaw for the September 2015 issue, Reggie has seen his product continue to grow. He has secured a number of licensing deals with colleges such as Notre Dame and Alabama to provide branded versions of the product.

He is now working on a new product called the OctoFit, a multi-solution fitness tool that has 11 key features and is the first product ever to address all main components of fitness in a relatively small package.

"I have worked with so many people, from ordinary people in the community to athletes," he says. "I have used a plethora of training devices and products. But the combination of the two (client and device) didn't usually match. There were pain points with products, depending on the client I was working with, or even for me personally. They lacked the range I desired, both personally and professionally." OctoFit launched on Kickstarter in November.



Reggie Senegal, the inventor of Snaplaces, has since developed the OctoFit.

"I didn't waste any time. I have started developing and designing a new product for women that I am really excited about." —LILY WINNAIL

Lily Winnail (Padalily)

Ten years ago, Lily created a 6.5-by-11-inch wrap-around, decorative foam pad for baby car seat handles to reduce the pain and strain on mothers' arms. In her June 2016 cover story, she told how Padalily and its line of sister products had amassed \$2 million in sales.

Her hard work and business savvy continue to pay off—and there is more to come. "We have officially licensed out Padalily with worldwide exclusive rights to a large baby company that is taking it big box," she says. "I'm really excited about this and have learned so much about licensing out your invention/idea in the process. Maybe it could encourage other inventors out there."

She says the company is a large manufacturer of baby goods focusing on travel and on-the-go items—"a perfect fit for Padalily. They purchased all our inventory in October and have already started selling it. They will be producing their own designs of the Padalily for 2018. It's a three-year royalty deal with the option to purchase after those 36 months or renew the license agreement.

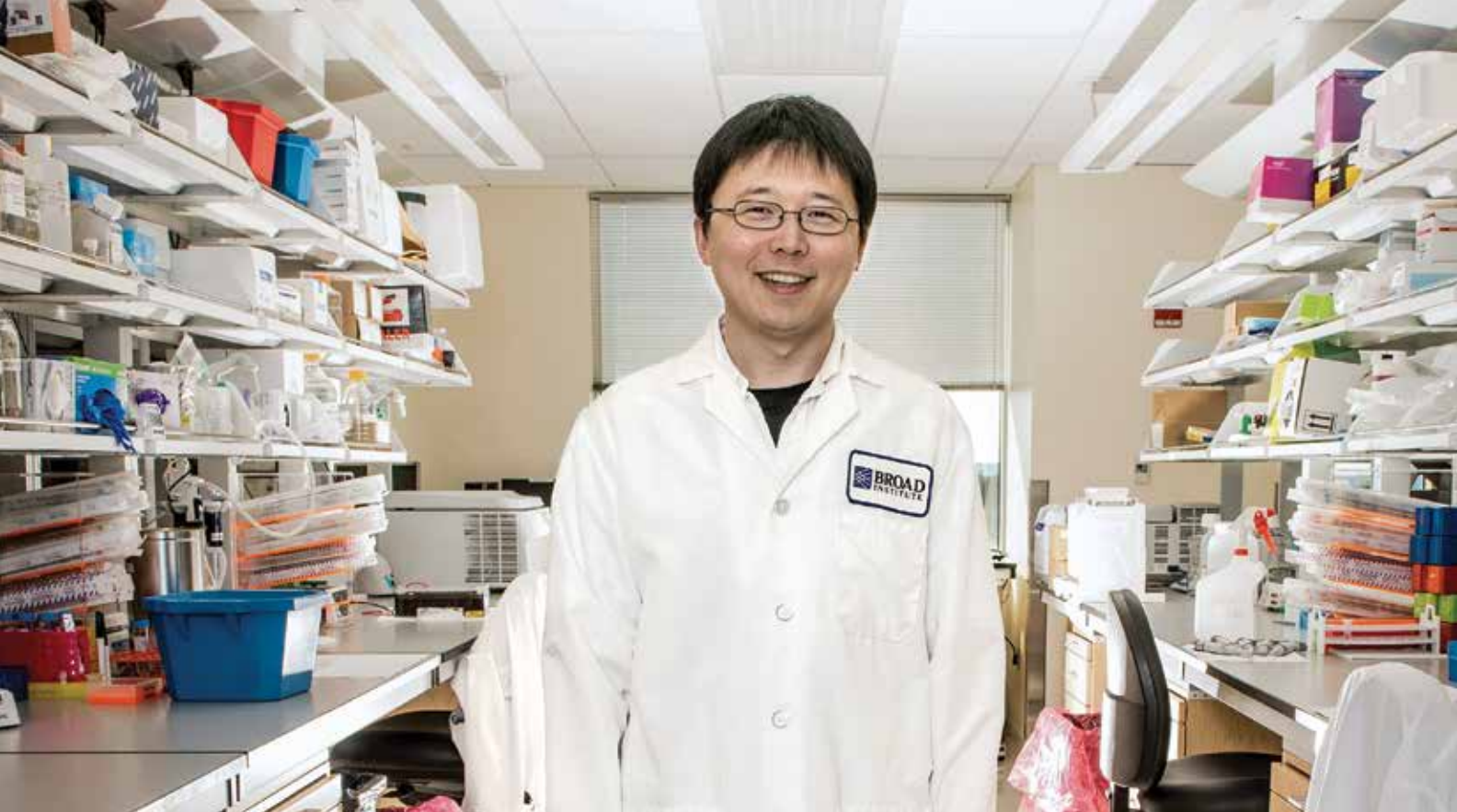
"I didn't waste any time. I have started developing and designing a new product for women that I am really excited about. That product should launch in February 2018." 📱



INVENTORS OF THE YEAR

A laurel wreath, rendered in a light blue color, encircles the text. It consists of two branches of leaves that curve upwards and meet at the bottom, forming a semi-circular frame around the central text.

TEAMS BEHIND CRISPR-CAS9, WITH POTENTIAL
TO ELIMINATE DISEASES, HONORED BY IPOEF



The inventors behind the CRISPR-Cas9 gene-editing technology, which could eventually help eliminate diseases such as sickle cell anemia, are the recipients of the Intellectual Property Owners Education Foundation's 44th Inventor of the Year Award.

Clustered Regularly Interspaced Short Palindromic Repeats allow scientists to identify diseased or mutated gene sequences in the human genome, then remove and replace them with healthy genes. **Dr. Jennifer Doudna** will accept the award on behalf of the team at the University of California, Berkeley. **Dr. Feng Zhang** is accepting the award on behalf of the team at the Broad Institute of MIT and Harvard, and the McGovern Institute for Brain Research at MIT.

CRISPR is "the hallmark of a bacterial defense system that forms the basis for CRISPR-Cas9 genome editing technology," according to the Broad Institute of MIT and Harvard. "CRISPR 'spacer' sequences are transcribed into short RNA sequences...capable of guiding the system to matching sequences of DNA.

"When the target DNA is found, Cas9—one of the enzymes produced by the CRISPR system—binds to the DNA and cuts it, shutting the targeted gene off."

IPOEF is honoring the inventor teams in recognition of their commitment to innovation and the positive impact it will have on society.

IPOEF Executive Director Mark Lauroesch said: "We are proud to give this year's award to the scientific teams behind this groundbreaking technology. CRISPR-Cas9 has already inspired a number of follow-on inventions. We are excited to see the positive impact this technology will have in the future."

The Inventor of the Year Award fosters the spirit of innovation and highlights the protection offered to inventors by the patent system. It is one of several programs of Intellectual Property Owners Education Foundation, a nonprofit subsidiary of Intellectual Property Owners Association, for educating the public on the importance of intellectual property rights. 📖





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COLLEGIATE INVENTORS WINNERS



Ning Mao, a student at Boston University, was the graduate gold winner.



The University of Iowa's Abraham Espinoza (left) and Matthew Rooda were undergraduate gold winners.

UNDERGRADUATE AND
GRADUATE STUDENTS
HONORED BY NATIONAL
INVENTORS HALL OF FAME

The six winning teams in this year's Collegiate Inventors Competition® created inventions ranging from a bandage to treat chronic wounds, to a device that saves the lives of piglets.

The competition, a program of the National Inventors Hall of Fame, is sponsored by the United States Patent and Trademark Office, Arrow Electronics, Bridgestone Americas and Skild. The 2017 online application management platform was made possible through the generous support of Skild.

Gold winners: Undergraduate—Swine Tech team, University of Iowa (Arrow Innovation Prize Winner). Matthew Rooda and Abraham Espinoza were awarded \$10,000 for their invention SmartGuard, which prevents piglets from being crushed to death by their mothers through monitoring the pitch, loudness and duration of squeals and determining whether a piglet is in distress. Swine Tech also won the Arrow Innovation Prize, chosen by Arrow Electronics. This advanced the team to the final round of judging—all expenses paid—at the competition, and included a private networking opportunity with a group of innovators from Arrow Electronics. Team adviser: Thomas Hornbeck.

Graduate—Engineered Probiotics, Boston University. Ning Mao won \$10,000 for her engineered safe bacterium that inhibits the progression of cholera infection. Team adviser: James Collins.

Silver winners: Undergraduate—AssistENT, Johns Hopkins University. The team of Clayton Andrews, Harrison Nguyen, Talia Kirschbaum and Pooja Nair won \$5,000 for their device that aids people experiencing difficulty breathing through the nose. This flexible yet stable device, worn completely within the nose, helps breathing by expanding nasal

passages safely, comfortably and discreetly. Team adviser: Robert Allen.

Graduate—dAST, California Institute of Technology. The invention by Nathan G. Schoepp and Travis S. Schlappi won \$5,000 for a test that reduces the unchecked use of antibiotics. It enables more effective prescriptions at the doctor's office. The test requires only 30 minutes to determine whether an infection can be successfully treated with an antibiotic; traditional methods require multiple days. Team adviser: Rustem Ismagilov.

Bronze winners: Undergraduate—InMEDBio, University of Virginia. Team members Ashwinraj Karthikeyan and Paco Abiad won \$2,500 for their Phoenix-Aid, a five-layer bandage that integrates the ABCs of chronic wound care—Accelerate healing, Block pathogens and Comfort wound—into one cost-effective product that is ideal for patients in developing countries, as well as for diabetics. Team adviser: Bala Mulloth.

Graduate—NextGen Structural Rehab System, West Virginia University. Praveen Kumar Reddy Majjigapu won \$2,500 for his invention: a four-part system designed to fortify existing structural joints, extend their service lives and improve the safety of a structure under extreme loads efficiently and economically. Team adviser: Hota GangaRao.

The People's Choice Award winner was CerebroSense from the Stevens Institute of Technology. Team members Maria V. De Abreu Pineda, Andrew Falcone and David Ferrara were awarded \$1,000 for creating a device via ultrasonic sensing technology to provide safe, non-contact, real-time measurements during open-brain surgeries to help reduce complications to the patient. Team adviser: Vikki Hazelwood. 📧

HOLIDAY GIFT GUIDE

BY JEREMY LOSAW

5 OF THE MOST IMPORTANT NEW TOOLS AND GADGETS

Another year of “trampled on Black Friday” headlines, and the big-box stores have set aside their lawn care supplies for the holiday season. Santas and “Frozen” characters have set up court, dancing to candy cane-sweet holiday tunes.

This is a time to look back, and forward—reflecting on a great year for new products for inventors and makers, as well as presenting my five favorite new items to help fill your stockings and garages with tools and gadgets for making 2018 your best year for prototyping.

OMAX ProtoMAX Personal Waterjet

\$19,950

protomax.com

It is no secret that the OMAX water jet is one of my favorite machines in the Inventys Partners shop. It can rip through metal, wood and plastic with ease; nearly all of our products have prototypes built with parts made on this machine.

Full-size water jets are large, and have a price that is out of reach for many inventors. So I was giddy to see that OMAX has scaled down the power of the machine to make it accessible to the masses. The ProtoMAX has a 12-by-12-inch bed size and delivers 30,000 psi cutting power that can go through 1-inch-thick steel. The unit only takes up 39.5 inches of floor space, so it can fit in any garage.

It also comes with all of the necessary pumps and hardware, 55 lbs. of cutting abrasive, as well as a laptop with the software to run the machine. The machine has just been released. Initial orders ship in December.



Adabox by Adafruit

\$60 quarterly

adafruit.com

If you or your loved ones are interested in DIY electronics, the Adabox is for you. Each quarter, Lady Ada and the Adafruit team curate a box of electronics, tools and goodies and ship them straight to your door. The themed boxes contain all you need to complete projects to help you learn how to use microcontrollers, sensors and other electronics. Easy-to-follow tutorials allow even novices to complete the projects and build the skills necessary to build their own prototypes. Previous box themes have provided hardware to explore IoT, motion and light. The final Adabox of the year ships in mid-December, allowing time to get it under your tree.



Kano Computer Kit

\$249.99

kano.me

The Kano kit, which raised more than \$1.5 million on Kickstarter, is endorsed by Apple guru Steve Wozniak. Though technically for kids, it is a great tool to help anyone learn about computer hardware and coding. The kit is driven by a Raspberry Pi 3 microcontroller and includes peripherals such as a keyboard, touchscreen, speaker and all of the requisite cabling. The hardware is brightly colored to make assembly easy, but the real genius of the kit is educational support and the ecosystem. The kit includes a storybook to aid assembly, which the makers boast is as easy as building a LEGO kit. You also get 150 hours of coding challenges that will help you or your little one learn the basics of coding, including loops and logic.

The Visual MBA by Jason Barron

\$17

thevisualmbabook.com

Inventors love building stuff and spending long nights in the garage. Learning about business and marketing are rarely on the agenda but can be crucial to helping navigate the financial world of product development. Fortunately, MBA student-turned-author Jason Barron realized how dry business concepts can be and wrote a book to help. He condensed his MBA learnings into sketch notes to explain concepts such as net operating income, debt ratios and expense reports. Each chapter is arranged as a business school class—surely the fastest and cheapest way to get the knowledge you need to help understand the financials of launching your product. 📖



Smooth-On Porable Silicone Starter Kit

\$52.49

smooth-on.com/products/porable-silicone-starter-kit/

Molding is a great way to make prototype parts. But it can be difficult, messy, and require special equipment. Smooth-On's Porable Silicone Starter Kit does not make molding any less messy, but it will help you learn the basic techniques. It includes trial sizes of silicone and casting resin for making molds and parts. The resins are 1:1 mix ratios, so they do not require a special scale, and their viscosity allows for trapped gases to escape without having to use a vacuum chamber. A user guide and instructional DVD provides tips and tricks, and helps get you molding quickly.



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





One Path to Success: **THINK LAZY**

INVENTORS FINDING MORE WAYS FOR US
TO WORK LESS AND DO LESS **BY JOHN G. RAU**

Believe it or not, you can commercialize inventor laziness! You can invent products for lazy people to use, or you can let lazy inventors invent things for other people to use.

To put this discussion in perspective: Donna Rodriguez claims in a 2010 blog, “Technology is Leading to Laziness,” at roundupnews.com that technology is progressing every day to make life easier—which will make people become more lazy. We now have devices that will do almost anything.

She says that with the internet available to anyone, there is no limit as to what people can do or how lazy they can become. “Everything you need is right there! You don’t even have to get dressed,” she writes.

Time conducted a survey several years ago to identify the most useful invention in history; the top choice was the cell phone. It is probably the ultimate laziness product in the sense that it gives people the ability to make phone calls from anywhere, and now you can send quick messages to friends or family. In fact, if you’re too lazy to get off the couch or out of your chair in order to talk to someone in the next room, you can just send the person a text message. Now, that’s really lazy!

Just stick out your tongue

Probably one of the earliest inventions for lazy people occurred in 1928, when a couple of Michigan cousins in the furniture business used wooden slats and orange crates in the design of a chair that tilted back in a daybed-ish way. They thought that sitting up straight took far too much effort, so they invented their own reclining chair.

They took suggestions for their new product’s name—Sit-N-Snooze, the Slack Back and the Comfort Carrier among them. They settled on La-Z-Boy.

The escalator, or moving staircase, was also an early example of an invention to be used by lazy people—those who didn’t want to walk or climb stairs. Other illustrative examples of inventions designed for lazy people, per lifebuzz.com and buzzfeed.com:

- A motorized ice cream cone holder. Normally, you would have to twist the whole cone to lick the ice cream. The motorized ice cream cone holder twists around for you. All you have to do is to stick your tongue out.
- An automatic dog ball thrower (called the iFetch, featured in the June 2016 *Inventors Digest*) that makes it

easier to play fetch with your dog. You don't have to be in good physical shape or exert much energy to play with your dog; just let the device throw out the ball and let your dog bring it back to you for insertion back into the device.

- A hair dryer stand so that you don't have to lift that heavy handheld hair dryer. Just mount it on the stand at the appropriate height and stand, or sit in proximity.
- Battery-operated electric scissors, when cutting something by hand is just too much work.
- Self-lacing shoes, when it's too difficult to have to bend over to tie your shoes.
- A toilet lid lifting paddle that makes it easier to raise the seat. You don't have to bend over. Just step on the paddle.
- A popcorn maker that shoots it straight into your mouth. No need for that bowl and napkins.

Ben Franklin? Lazy

Technology may be taking away the challenge of hard work. As Thomas Edison said, "We often miss the opportunity because it's dressed in overalls and looks like work." Ronald Reagan once joked that "I've heard that hard work never killed anyone, but I say, why take the chance?"

Benjamin Franklin once said that he was "the laziest man in the world. I invented all those things to save myself from toil." He exhibited many of the "lazy inventor attributes" cited by Shewali Tiwari in her January 2015 blog, "15 Reasons Why Lazy People Are Actually Really Really Smart" (storypick.com):

- They find the easiest, most convenient and brilliant ways to do things.

Inventions that save time and effort can provide an opportunity for more creative thinking—or more doing nothing.

- When it comes to being creative, they will surprise you with the functionality of things that you have probably never considered.
- They are generally more efficient in the sense that if a good shortcut or more efficient method of accomplishing a task exists, a lazy person will attempt to figure it out.
- They have an easy alternative for everything that they're supposed to do. Bill Gates said: "I choose a lazy person to do a hard job because a lazy person will find an easy way to do it."
- Their laziness typically results in a savings of time and energy for them, allowing them to have more time where their mind can wander—which results in the opportunity for more creative thinking and innovation.

Israelmore Ayivor, the noted self-improvement motivator and inspirational writer, is quoted as saying that "When you come across an excellent invention, what it should tell you is that someone used most of his sleeping time as his thinking time...and he kept doing the same until his good became better and his better became the best!" 🗨️

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



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Many inventors whose ideas fall by the wayside have great ideas but fail to gain the trust of the people they need to help them, often because they don't show enough business savvy.

Too often, inventors don't show they have the experience to understand the task(s) in front of them—or to execute the tasks once they understand what to do. They simply need to take a little time to bring themselves up to speed on the market and the process of introducing a product so they look like a winner. You will make a much better presentation if you follow the steps below before going out to talk to people in the market.

This is very important: Don't ever say that you have a "can't-miss" or "blockbuster" idea, or that you have a product that is sure to be taken by a big-box store. This will only convince experts that you don't know what you're doing. Just say that you have an interesting idea that you believe has market potential.

1st STEP: Put together a professional information sheet on your product. Include these items and a picture or drawing of your prototype, if possible:

- Brief product description.
- Why you developed the idea.
- Target customer: Be specific about the target customer. For example, if you have a kitchen item, you might be tempted to say "everyone,"—but that is not nearly as effective as stating "people who buy three to five new kitchen utensils per year, and buy new pots every five years." People want to know that you have narrowed your market.
- Main product benefits. Include the products people are buying now to achieve the same purpose your

product fills. (It is extremely helpful to have brochures, or printouts from web pages.) Be sure to check out an industry directory for products and not just rely on your local stores. You can typically find a product directory at trade magazine web sites.

- Target price.
- Sales outlets—where the products will be sold.
- Distribution outlets—what types of distributors or manufacturer's representatives can be used to sell the product.

If you don't know this information, you can get help with your specific product from SCORE—retired business executives who offer free help (score.org). Another good source is your local Small Business Development

Center (sba.gov). Both organizations can help you define your distribution channel and the sales outlets where you will sell your product.

You should put this information on no more than two pages of paper. Then whenever you talk about your interesting idea, you can show someone that you have, in fact, done your homework. The brochures about other products can be attachments.

2nd STEP: Show why you are knowledgeable about your product idea.

People always will take more interest in your idea if you show specialized knowledge about the product area that will convince people you might have a uniquely innovative product. People take notice if an operating room nurse creates an idea for removing the fluids that are used to cleanse body cavities during surgery.

Another area in which people take notice is when you are in the distribution channel for the product.

can penetrate. You almost always are better off starting with a specialized distribution outlet. If you have a baby item, start at specialized baby stores.

Once you choose a distribution channel, you need a plan on how you are going to sell to that channel—through distributors, manufacturer's representatives, or direct sales to some small regional chains. To learn more about your distribution outlets, read industry trade magazines that often discuss distribution, your contacts, or by attending trade shows. You can also get help from the SCORE or SBDC organizations mentioned earlier.

4th STEP: Create a Target Customer Profile Chart.

One of the final steps is to create a customer profile chart that details the market opportunity available for your product. Such an example will list market segments, needs, how those needs are met, and the product that ends up being purchased. This is another step to show that you've done your homework.

Inventors need to take time to bring themselves up to speed on the market and the process of introducing a product so they look like a winner.

People are more likely to listen more to a mom with a new baby product who is also a baby products manufacturing representative.

You can still adjust if you don't have a background that suggests you really understand your product. For example, a mom with a baby product needs to find a baby store owner or a baby product's manufacturer's representative to support the product. You can even give the person a 5 percent stake in the product so you can call him or her a partner.

How do you find people who can support your product? First, network with the people you know. Or locate the industry's trade magazine, which you can typically do with an internet search.

You can also request literature from companies advertising or posting new product announcements in the trade magazines. Typically the literature comes with the name of the local salesperson. Then call people and tell the salesperson you are looking for an adviser on your new product. Offer the adviser 5 percent ownership in your idea and ask if you can discuss your idea with him or her in person.

3rd STEP: Pick a distribution channel you can penetrate, and have a plan to do so.

You can't just tell people you are going to sell your product at Wal-Mart. Wal-Mart rarely buys from a small, one-product company, especially one without commercial success. Instead, focus on a distribution channel you

5th STEP: Have a great name, slogan and packaging concept.

People in the new product business consider a great name, slogan and packaging just as important as having a great product. Sometimes it is more important. Be sure to do a trademark search for the name you want to use. Many times, inventors use names that are already associated with products in the industry. Making that mistake might not only be costly; it will hurt your image.

Slogans and a drawing of what your package will look like show that you have worked hard on your invention and are preparing realistically to bring your product to market. It also shows you are concerned about selling your product, and that you know sales is the toughest part of introducing any new product.

Do your homework so your idea has a chance to succeed. If you believe in your idea, make a commitment to do the work to turn yourself and your product into a winner. 🍀

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





Where is the IP Market Headed?

RECENT EVENTS REVEAL SOME TRENDS—AND CLUES

BY LOUIS CARBONNEAU

There seems to be an acceleration of newsworthy events in the IP space lately, and tracking all of what is happening can be mind-boggling.

In a geopolitical game where new commercial players are taking leadership cues from incumbents, it has never been more obvious how high the stakes are, and patents are playing an increasingly important role in this transition. Local governments, pushed by their constituents (which often take the form of high-paid lobbyists) are either helping—or hurting—their innovation ecosystems by the way they approach intellectual property.

Meanwhile, most technology companies, which are generally large patent owners themselves, are using every tool at their disposal to make sure they maintain their dominant position and can bring their products to market with the least amount of disruption. This has resulted in a well-orchestrated ballet where several courses of action are pursued on parallel tracks, and it is sometimes hard to connect the dots. But let's give it a try, by looking at it slice by slice.

Patent system still sluggish

Three major IP-related events took place recently. The first was the Licensing Executive Society (LES USA/Canada) annual meeting in Chicago; the second, the 2017 London IP Summit, and last but not least, the annual IPBC Asia in Tokyo. Tangible IP was a sponsor at LES and attended the event. I also read most of the summaries of the other two events, and it is clear there is still a general malaise regarding the condition of the patent system—especially in the United States, where a generalized nostalgia could be summarized as “let's make patents great again.”

LES USA/Canada, which thrives on a healthy IP licensing ecosystem, used to attract more than 2,000 delegates at its annual gathering. There were fewer than 600 this year. The continued down market seems to have taken a toll on the rank-and-file, as many testified to the difficulty these days of initiating a business dialogue around licensing. As dialogue proves nearly impossible, litigation appears to be the only sure-fire way to get the other side's attention—never an ideal scenario.

Again, we heard the same consensus that inter partes reviews before the Patent Trial and Appeal Board, and the broad application of the Alice doctrine around abstract ideas, have dealt

a solid one-two punch to the U.S. system (the new head of the Japanese Patent Office, Naoko Munakata, accurately referred to it as an “over-correction” to the “patent troll” phenomenon). As a result, the uncertainty over patents keeps valuations low and sellers far outnumber buyers, with large corporations entering the fray as they also attempt to disgorge parts of their expansive portfolios. According to Allied Security Trust, a defensive aggregator that tracks most patents offered on the secondary market, 2017 could see more than 30,000 patents for sale. That is almost double last year's total, and sadly, only a fraction of those will sell.



IPBC Asia was more upbeat, because although the United States continues to fall short with its patent system, Asia (mostly China) is the large benefactor of a strong emerging patent enforcement system. This leads to an influx of money because as we all know, money always flows to safe and predictable environments. Many Japanese companies are becoming more aggressive in defense of their portfolios—such as Hitachi, which (through its Maxell unit) recently sued BlackBerry, ASUS and BLU Products for patent infringement. We are also starting to see large Japanese banks such as Nomura share their interest in acquiring IP assets, as it is now predicted that by 2050 more than half of the world gross domestic product will come from Asia.

Certain speakers at this year's always excellent IP Dealmakers Forum (which was scheduled to take place in November) have shared their views about where the market is heading, which we can summarize as “cautiously optimistic.” I would put myself in the same category. Recent events—one large transaction closed, and a few offers received on other portfolios we are currently selling—do provide some support for what I think will be a gradual uptick of the market in the next year. This, of course, could change completely if the “big one” happens (see next item).



What the courts are saying

The whole IP community is holding its breath now that we learned the U.S. Supreme Court was to hear the landmark decision of ***Oil States Energy Services v. Greene's Energy Group*** on November 27. Though the written decision may not come before June, pundits will surely dissect every comment and the body language of the bench during the oral hearing.

This is considered by many to be the most important patent case of this decade, as it could reaffirm patents as a private property right and make the PTAB post-grant reviews (mainly the intellectual property rights system) unconstitutional. The numbers of amicus curiae (i.e., someone not a party to the litigation who volunteers or is invited by the court to give advice upon a pending matter) filed so far in the case have become a phenomenon by itself, pitting Big Tech against Big Pharma, inventors against industry associations, and public uni-

***Oil States* is considered by many to be the most important patent case of this decade, as it could reaffirm patents as a private property right and make the PTAB post-grant reviews unconstitutional.**

versities against their own government.

Although maintaining the status quo would arguably embolden parties accused of patent infringement to double down on their challenges—IPR petitions are down recently, as many are in a holding pattern—doing away with the PTAB would have an immediate impact on the liquidity and valuation of patents. We would essentially go back to the situation that existed in large part before the 2011 America Invents Act introduced these new recourses.

After having read several of the briefs filed on both sides of the case, my head says SCOTUS (never a friend of patents in recent times) will find a way to avoid disrupting the current regime, while my heart goes to an affirmation of the long-unequivocal doctrine that patents are property rights and should be treated as such.

Meanwhile, a case from the U.S. Court of Appeals for the Federal Circuit—***Aqua Products Inc. v. Matal***—has made it easier for patentees to amend their claims as a way to avoid having the PTAB declare them invalid. Historically, patentees have been able to amend claims only in the rarest occasions. Time will tell if the PTAB will play ball with patentees—assuming it still exists six months from now, as it has been accused too many times of anti-patent bias.

Buyers and sellers

The big news lately was the sale by **Nokia** of yet another large slice of its patent portfolio, or actually that of recently acquired Alcatel. However, contrary to previous deals in which Nokia squarely engaged in the so-called “privateering” model by selling to NPEs such as Conversant, Acacia and more recently Aqua Licensing, this time it has partnered with brand-new entity **Provenance Asset Group, LLC**. Provenance is the brainchild of former Allied Security Trust CEO and RPX executive Dan McCurdy, who will lead the new entity along with former Kodak IP leaders Tim Lynch and Laura Quatela. Former AST executive Linda Biel is also joining the new group.

Nokia sold 12,000 patents to Provenance, which will offer those (or slices thereof) to small companies as a temporary defensive measure, if and when they need the rights. Variations of this model have been tried over the years by Intellectual Ventures, and RPX still has an offering that is a bit similar. Both failed to attract a critical mass of takers or provide a robust return (incidentally, RPX recently announced a projected expansion into China). It will be interesting to see how Provenance fares under this model, especially as it has already made public that it will not sell to NPEs. ☛



Dan McCurdy

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



Who is shaking hands?

The poor state of the licensing market does not mean no deals are being inked, even if as a way to settle ongoing litigation. Recent such deals include a major settlement between **Telcos Comcast** and **Sprint**, with Comcast paying Sprint \$250 million. **Dominion Harbor** announced the renewal of a licensing deal with **Nokia**; **Amazon** and **Broadcom** announced that they settled their ongoing IPR dispute. **Blackbird Technologies** announced it settled all litigation against **TuffStuff Fitness International** related to large-scale exercise equipment.



Reverse the ‘Ubiquity Defense’ Ruling in eBay Case

MUCH OF PATENT INFRINGEMENT IS WILLFUL

BY PAUL MORINVILLE AND GENE QUINN

The American Inventors Protection Act of 1999 requires the United States Patent and Trademark Office to publish patent applications 18 months after the inventor files the application. An inventor can ask that the patent application not be published if no corresponding foreign applications will be filed. But the vast majority of patent applications, with full detail disclosed, are published by the USPTO on its searchable public website regardless of whether a patent ever issues.

This creates a tough decision for inventors. Publishing how an invention works obviously means that it can never be protected as a trade secret. The loss of trade secret protection should theoretically be overcome when the patent issues because it becomes an “exclusive right,” a property right, and infringers can be enjoined. Of course, that theory only works if the government enables the exclusivity and provides a reasonable and affordable way to enforce it. Based on trust that the government will uphold its end of the bargain (a very poor assumption in 2017), most inventors allow their invention to be published and forgo trade secret protections. That is becoming an increasingly bad choice.

Once the patent application is published by the USPTO, anyone can search the website to find inventions that apply to his or her business, pick off the good ones, and commercialize them long before the inventor has patent protection.

A 2006 Supreme Court ruling in *eBay v. MercExchange* effectively eliminated injunctive relief by requiring an impossibly difficult public interest test before a court can grant injunctive relief. So if a big corporation steals an invention made by an independent inventor, or even an invention by a small technology company or start-up, odds are it gets to keep on trampling the allegedly exclusive rights even if found to be infringing after having lost at trial.

When the inventor finally gets the patent granted (typically years after USPTO publication, and sometimes decades after publication), it is practically impossible to attract investment to commercialize an invention if big

corporations have saturated the market with infringing products. Investors will uniformly explain to inventors that the odds of competing with these big corporations in a saturated market, post-eBay ruling, is effectively zero, so they won’t invest. I was told by several venture capitalists that I didn’t need an investor; I needed a lawyer.

‘Scraping? Moi?’

It is difficult to argue with the perspective of these investors. How can an individual, start-up or even a small technology company compete when a big corporation has stolen an invention and saturated the marketplace? Once upon a time strong patents equalized the playing field, but those days are long gone—at least in America.

Of course, if an inventor has a couple of million dollars stuffed in the mattress, he or she can hire a lawyer and sue infringers. But what can realistically be achieved? Because of the eBay case, it is nearly impossible to satisfy the public interest test without a product on the market and the means to manufacture it at a scale that can replace the large corporate infringer’s products. A tall order indeed. The remaining option is a compulsory license at an arbitrary value decided by a judge and then re-decided by the U.S. Court of Appeals for the Federal Circuit.

The reality created by the eBay verdict in light of the AIPA is simple: If you scrape an invention from the USPTO website and massively commercialize it, you get to keep it. Ubiquity has become a defense. How odd that ubiquity caused by an initial theft becomes an impenetrable shield in patent infringement litigation.

It is humorous when big corporations say they would never scrape the USPTO for inventions to steal. The job of a big corporation is to commercialize technology, to maximize profits, and to protect its business and profits. Scraping the USPTO website aids in all of these business goals. If the corporation isn’t doing that—given the current climate in the United States and the one-sided laws in favor of infringers—it is not acting in the best interests of the company, and shareholders and shareholder lawyers should demand to know why.



Big corporations deny that they would ever steal from patent applications on the USPTO website, even if it is best for their bottom line to do so.

Scraping grants access to new technologies that corporations would not otherwise have access to, and at virtually no cost.

Illogical expectations

Virtually all big corporations claim they are the leading edge of technology—the experts in the market of that particular technology. They want us to believe that they are the ones who invent the next generation of products, and that is the reason we should buy their products over a competitor's products. The claim of being the leading company necessarily means that they know what technology is coming down the pike, and they have to be the expert or risk their business.

There are a lot of ways that big corporations learn what technology is coming. They go where the technology is born. They reverse-engineer competitor products, attend trade shows, hire employees from competitors, talk to vendors, and enter into acquisition discussions. They review competitor websites, white papers and technical documents. And they search the USPTO website. It is the one place where those technologies are openly published and enabled so that folks skilled in the art can build it. After all, that is one of the basic requirements of an adequate disclosure.

With thousands of employees and tens of millions of dollars in revenue, big corporations have plenty of resources to find inventions on the USPTO website. Although there are a lot of patents overall, the number that would apply to any given field is a much smaller number. Furthermore, these big corporations regularly search trademark databases maintained by the USPTO to ensure no trademarks are being requested

that come too close to any in their trademark portfolio. So why can't they do the same for patents? It is easier to fake ignorance and steal technology rather than respect patents in an era in which patent rights are historically weak.

But when a big corporation wants to invalidate an inventor's patent, it expects the inventor to know not only everything on the USPTO website but even documents written in different languages and stored on paper in places such as Belarus or Zimbabwe. With their vast resources, big corporations on the one hand argue they cannot possibly know what is on the USPTO website because they do not have the resources to do it, and then on the other hand demand that inventors with minimal or no resources are required know all that and more. How ridiculous!

Of course, not all infringers should be liable for willful patent infringement. Some infringers are not the experts in the field. Some are users of technology produced by the experts.

If you are a small coffee shop and you purchase a router, you are not an expert and you are not willfully infringing. You just bought a product that some infringer sold you and you reasonably believed could be lawfully purchased and used. But if you are the company producing that router, it should be assumed that you are willfully infringing.

We need to reverse the eBay ruling to restore injunctive relief, and we need to make willful patent infringement the rebuttable default for infringing a patent. ☐

Paul Morinville is managing director of US Inventor, Inc., an inventor organization working in Washington, D.C., and around the United States to advocate for strong patent protection for inventors and startups. He is an independent inventor with dozens of patents and pending patent applications in enterprise software.





Iancu Questionnaire Gives Insight on His Viewpoints

FILINGS FLESH OUT DETAILS IN USPTO DIRECTOR NOMINEE'S BACKGROUND, PATENT ATTORNEY EXPERIENCE

BY STEVE BRACHMANN & GENE QUINN

There is growing speculation among Capitol Hill watchers that the Senate Judiciary Committee may soon hold a nomination hearing to vet Andrei Iancu's credentials to serve as the next director of the United States Patent and Trademark Office—perhaps by the time you read this. Although there's a strong chance that the hearing would focus on developments such as the recent Allergan-St. Regis Mohawk Tribe patent arbitration deal (in which the drug maker handed off six patents to a Native American tribe in order to avoid challenges by the Patent Trial and Appeal Board), the hearing will be the patent world's first true glimpse into Iancu's vision for the role of the USPTO in promoting America's innovation economy.

Much of Iancu's education and experience in his legal practice, including his time as managing partner at Irell & Manella LLP, has been publicized in profiles of Iancu that have come out since his nomination to the USPTO director position by the Trump Administration was announced in late August. Some additional details have begun to emerge, thanks to a public response to a questionnaire submitted by Iancu to the Senate Judiciary Committee. This filing and attached documents help to flesh out many of the details surrounding the patent attorney's experience, as well as his viewpoints on certain trends affecting patent system stakeholders as outlined in articles and speeches he gave.

Early background

Born in April 1968 in Bucharest, Romania, Iancu completed his master's in mechanical engineering in 1990 at the UCLA School of Engineering; the year prior, he began working as an engineer with Hughes Aircraft Co. Iancu turned toward legal studies during the early 1990s and completed his Juris Doctor degree at the UCLA School of Law in 1996. He joined Irell & Manella in 1999 and since 2013 has also served as a member of the board of directors at Sinai Temple in Los Angeles.

At Hughes Aircraft, Iancu was a Hughes Master Fellow and a recipient of the Malcolm R. Currie Innovation Award. While at UCLA Law, he was a member of the Order of the Coif and a recipient of

the Melville B. Nimmer Copyright Award. During his tenure at Irell & Manella, Iancu received industry recognition from Chambers USA, Intellectual Asset Management, California Lawyer, The Best Lawyers in America and various other legal publications and California-based media outlets.

Iancu has been a member of the California State Bar since December 1996 without any lapses. Since 1998, he has been admitted to practice in front of the USPTO. Iancu has also been admitted to the bar for practicing in front of various district courts and circuit courts of appeal.

Writings on IPRs

Many stakeholders in the U.S. patent system will likely be interested to know Iancu's thoughts regarding patent validity challenge trials in force at the PTAB. For instance, in 2016, the Journal of the Patent & Trademark Office Society published an article Iancu wrote with two other authors on indefiniteness in inter partes review proceedings. (Inter partes review is a trial proceeding conducted at PTAB to review the patentability of one or more claims in a patent, only on a ground that could be raised under U.S. Code Title 35 Sections 102 or 103, and only on the basis of prior art consisting of patents or printed publications.) This article discusses issues that PTAB panels have had in instituting IPRs because of the indefiniteness of challenged claims, which could negatively affect either the patent owner or the petitioner. The article includes a proposed framework for dealing with such problems of indefiniteness, including the PTAB soliciting both parties in a case to brief the panel on the indefiniteness issue and then render a final written decision that can be appealable.

In the fall of 2012, during the early days of the implementation of the America Invents Act of 2011, Iancu was a co-author of an article published by the American Intellectual Property Law Association Quarterly Journal looking at IPRs as the “new normal” and the impacts of the new pathway to patent validity challenges. As the article concludes, IPRs have completely obviated certain aspects of the re-examination process while introducing features that “range from helpful to arguably detrimental.”

Andrei Iancu has co-authored reports on inter partes review and the patentability of software, among other current patent law topics.



In recent years since the publication of this article, the sense of IPRs as detrimental has been supported by incredibly high rates of claim invalidation—due, in part, to a lack of a code of conduct that would require judge recusal in certain cases. Iancu's 2012 article notes that although new features such as discovery might be beneficial "at first blush," it would take time to tell whether IPRs were an improvement over re-examinations. Many stakeholders in the U.S. patent system are certain as to whether IPRs have proven to be beneficial.

On software, Eastern District

The patentability of software continues to be an area of much debate in the U.S. patent system. Some of Iancu's views on that are evident in a February 2008 article published by the Journal of the Patent & Trademark Office Society. The article, which again lists Iancu as a co-author, notes that the intangibility of software has led to controversy over the concept of software patents. The article concludes that while Beauregard claims (which are directed at computer program products) could very well satisfy basic patentability requirements under U.S. Code Title 35 Section 101, those same claims could well fail on novelty under Section 102 or obviousness under Section 103. Federal court activity cited in the article led the authors to conclude that Congress will need to take action to "rescue the patentability of computer programs—if that is deemed desirable."

The changing world of Section 101 patentability has been a topic on which Iancu has spoken more recently, including at the American Conference Institute's 4th Annual Paragraph IV Disputes Master Symposium in Chicago last year.

Also, the high percentage of U.S. patent cases filed in the Eastern District of Texas has been a subject of hot debate in recent years. In spring 2011, the SMU Science and Technology Law Review published an article co-authored by Iancu that provided analysis on the real reasons that patent litigation is driven toward eastern Texas.

Despite criticisms heaped upon Eastern Texas juries and their supposed ignorance on patent matters, the article concluded that there is little evidence the jury

pool in eastern Texas is a primary draw for patent plaintiffs. Rather, a high proportion of cases actually going to trial and low summary judgment win rates appeared to be bigger factors. Plaintiffs may also find the district to issue more accurate rulings, as decisions appealed from this district are affirmed by the U.S. Court of Appeals for the Federal Circuit at a high rate.

Litigation figures

Iancu's response to the Senate Judiciary Committee's questionnaire indicates that 100 percent of his practice has focused on civil litigation, about 75 percent of which has been litigated in federal district court. The other 25 percent has been litigated in front of administrative agencies. In about 10 cases that Iancu litigated to a final verdict, two-thirds reached a non-jury verdict.

Listed among his significant legal activities is his involvement with a legal team representing BlackBerry on intellectual property issues connected to that company's \$777 million investment in the Rockstar Consortium, a group made up of tech companies investing \$4.5 billion to acquire a substantial majority of the patent portfolio held by Nortel Networks. We have previously reported on his successful representation of TiVo against infringers, and the fact that he represented the challenger in *Ariosa v. Sequenom*. ☞

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.



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.





Chinese Firm a Case Study in Patent Progress

HUAWEI SHOWS WHY COUNTRY'S INNOVATION ECONOMY MAY SOON PASS U.S. **BY STEVE BRACHMANN AND GENE QUINN**

The Hoover Institution Working Group on Intellectual Property, Innovation, and Productivity (Hoover IP²) recently issued a revised working paper that provided an updated data set on mobile phone patent license royalties in a global context. The authors provided analysis of patent royalties in the entire mobile phone value chain in order to estimate the average cumulative royalty yield in the value chain for mobile phones.

The paper concluded that in 2016, original equipment manufacturers sold a total of 1.97 billion mobile phones for a total of \$425.1 billion in revenue, indicating an average selling price of \$215.50 per phone and an average cumulative royalty of \$7.20 per phone.

One of the paper's notes on its data analysis indicates the difficulty of identifying licensing revenues for some firms—such as Chinese privately owned collectives that aren't subject to the same financial reporting standards of U.S. or European companies. One such firm is Shenzhen-based networking and telecommunications firm Huawei Technologies, a relative newcomer to the mobile phone licensing sector. Going on the assumption that Huawei's licensing revenues are similar to InterDigital, a U.S.-based counterpart, the authors determined that Huawei is earning approximately 30 percent of all patent revenues made by all Chinese companies combined.

A new global phone power

Intellectual Asset Management has reported both on the paper's conclusions—which indicate that arguments over unduly high licensing rates in the mobile phone sector are largely unfounded—as well as the implications of Huawei's large licensing revenues. IAM further cites comments from Huawei IP director Jason Ding, reflecting the fact that as U.S. companies continue to dislike patent protection, the strength of the patent system globally is leading Asian companies to amass more patents and more licensing opportunities than their American counterparts.

“Increasing numbers of U.S. operating companies dislike patent protection,” Ding explained to IAM. “[T]he

production and manufacture of products are increasingly located in Asia and Asian companies have more and more patents... opportunities are being transferred to the East just like manufacturing was.”

Randall Rader, former chief judge for the U.S. Court of Appeals for the Federal Circuit, notes the same trend. “I can tell you that my work in China and Japan and Korea tells me that the companies there are quite delighted to pick up the slack where American companies don't have quite the protections that they do under their law,” he recently told Eli Mazur, a trusted advisor for multinational companies operating in Vietnam, in an interview.

Huawei has rapidly become one of the most important players in the global mobile phone patent market in recent years, gladly accepting opportunities and copious amounts of licensing revenue that were once the domain of Silicon Valley innovators. Huawei's meteoric rise can be explained by an aggressive patent acquisition strategy and an increasingly favorable patent, licensing and enforcement environment in China.

Huawei's Patent Cooperation Treaty patent application filings have seen remarkable growth, going from 456 in 2014 to 3,898 in 2015. The Chinese telecom firm overtook Qualcomm, Samsung and others to become the top filer of PCT patent applications in that year, according to statistics published by the World Intellectual Property Organization. In 2016, Huawei's 3,692 published PCT patent applications trailed ZTE, another Shenzhen-based entity, which took the top spot with 4,123.

Government takes lead

Stakeholders in the U.S. patent system likely can't help but see this as a further harbinger that China's innovation economy will overtake America's in the coming years. In direct contrast to the United States, innovators are finding that China is increasingly welcoming to business method and software innovations after it relaxed patent examination guidelines in those sectors earlier this year. This July, China's State Intellectual Property Office issued new regulations to streamline the examination process for patent applications



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in internet, big data, cloud computing, information technology and other areas of technology.

As a result, patent application filings in China have been up overall, not just with large domestic entities such as Huawei and ZTE. In 2015, more than 1 million patent applications were filed with SIPO—more than one-third of global patent application filings that year, according to WIPO. Incredibly, 96 percent of those patent applications are filed in the domestic office only, indicating that many intellectual property owners are only interested in their market position in China.

President Xi Jinping's remarks at a Chinese state economic forum in July, in which he said that "IP infringers will pay a heavy price," appear to be supported by action in Chinese courts and federal agencies. In August, U.S. athletic shoe and apparel company New Balance won the largest trademark infringement verdict that a Chinese court has ever handed out, garnering a total of \$1.5 million in U.S. dollars. In September, China's National Copyright Administration informed domestic and foreign music companies that they must adhere to international practices to improve licensing. Stronger protections for IP rights may well be one reason that the 2017 Beijing International Book Fair had a 5 percent increase in copyright deals over the 2016 event, including export and import agreements.

Some critical of China point out that many Chinese patent applications are of low quality, with large numbers of Chinese patents acquired due to various incentives provided by the Chinese government. Although that may be true, the real story is that China is successfully laying the groundwork for a familiarity with the Chinese patent system that will pay future dividends. If China wanted to plant a patent seed for the future, it is hard to imagine a better strategy than incentivizing patent filings.

"Increasing numbers of U.S. operating companies dislike patent protection ... opportunities are being transferred to the East just like manufacturing was."

—JASON DING, HUAWEI TECHNOLOGIES IP DIRECTOR

Rankings keep shifting

China's system of patent rights will overtake the U.S. system if both continue on their current trajectory, and it may happen soon.

The 2017 Global IP Index published by the U.S. Chamber of Commerce showed that the United States' system of patent rights dropped to 10th from its first-place ranking it had held since the IP index was established. China was 20th in patent rights in that index, but the way either nation has been handling the key areas of weakness identified in the index is very telling.

China's overall score in the IP index has increased slightly in each consecutive edition. It appears the country is working to tamp down historic levels of IP infringement, bring the interpretation of IP laws in sync with international standards, enable infringed parties to seek adequate remedy, and lower hurdles to market access for IP commercialization among foreign entities. Each of these are identified as key weaknesses for China, which seems to be addressing them.

Conversely, the United States seems to be doing nothing to address the downward trajectory of its patent system. It wouldn't be shocking to see China's patent system show further gains and the U.S. patent system show further weakening when the 2018 edition of the Chamber of Commerce's IP index is released. 📱



After Goodlatte's Exit, What and Who is Next?

HOUSE JUDICIARY CHAIR HAS BEEN A STRONG BACKER OF PATENT REFORM **BY GENE QUINN**



The November 9 announcement by U.S. Rep. Bob Goodlatte (R-Va.) that he will not stand for re-election in 2018 leaves the fate of future patent reform efforts in the hands of the next person to wield the gavel as chair of the House Judiciary Committee.

Goodlatte, a strong proponent for patent reform, explained his decision in a letter to friends published on his official Congressional website. He said that every two years he sits down with his wife, Maryellen, to discuss the future and decide whether to run for re-election.

"When we discussed the 2018 election, the conversation ended a little differently than in past years," Goodlatte explained. "After much contemplation and prayer, we decided it was the right time for me to step aside and let someone else serve the Sixth District. I will not seek re-election. With my time as Chairman of the Judiciary Committee ending in December 2018, this is a natural stepping-off point and an opportunity to begin a new chapter of my career and spend more time with my family, particularly my granddaughters."

U.S. Rep. Darrell Issa (R-Calif.) can be expected to make an internal push for the House Judiciary gavel, but his handling of the House Oversight Committee during the Obama Administration rubbed many Republicans the wrong way and he narrowly prevailed in his 2016 re-election campaign against retired Marine Col. Doug Applegate. However, if Issa becomes the

next chair, patent reform would almost certainly proceed at a breakneck pace in the House.

Goodlatte said his work in Congress is not complete. He specifically mentioned his continued desire to work on immigration reform, simplifying the tax code in order to stimulate job growth, enacting criminal justice reform, repealing Obamacare, and continuing to advance the freedoms and liberties enshrined in the Constitution.

Notably, Goodlatte did not mention patent reform, copyright reform, trade or intellectual property issues. Perhaps that can be expected in an announcement made for widespread consumption, but he has historically listed patent reform among his top priorities.

Although some will be surprised to learn that Goodlatte is stepping down—and others will likely associate his decision to step down after Democrats' victories in Virginia and New Jersey on November 9—those who have been watching Goodlatte and his district cannot be particularly shocked.

As he mentioned in his announcement letter, his time as chairman of the prestigious judiciary committee is ending at the end of the 115th Congress, which had caused some speculation for months that he might take this opportunity to exit. Further, rumors around Washington and in Virginia had been mounting in recent months given the fact that Goodlatte has slowed his campaign fundraising efforts—and because he had largely been viewed as uncharacteristically abandoning his district by choosing to send staffers to his district for meetings and events rather than appearing himself. ☐



U.S. Rep. Darrell Issa (R-Calif.) can be expected to make an internal push for the gavel.

Tax Reform Bill Proposes Repeal of Capital Gains Treatment for Patents

The Republican tax reform bill recently submitted in the House of Representatives has buried in it patent provisions that would devalue certain patent transactions by making them less advantageous from a tax perspective.

Under current law, an individual who creates a patent and an unrelated individual who acquires a patent from its creator before the actual commercial use of the patent may treat any gains on the transfer of the patent as a long-term capital gain. To qualify, the transfer must be of substantially all the rights to the patent or an undivided interest therein, and cannot be by gift, inheritance or device.

Under the proposed provisions—Sections 3311 and 3312 of the bill, found on pages 248-249—the rule treating the transfer of a patent before its commercial exploitation as being available for long-term capital gains treatment would be repealed. The provision, if enacted, would become effective for dispositions after 2017.

It is disheartening to see Republican leadership move to treat patents in this way, which suggests it does not view patents as a private property right. That is a growing and disturbing trend. It will be interesting to see whether conservative groups, which have been very outspoken on patents being a private property right, will push back on this latest bid to chip away at a property right of Constitutional magnitude. —Gene Quinn

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IoT Corner

The **Consumer Electronics Show** (January 9-12, 2018 in Las Vegas) has recognized the uptick of the use of connected devices and has announced a bespoke exhibit area devoted to the Smart City movement.

The exhibit is in partnership with consulting firm Deloitte, which has been a key enabler to get communities, government and civic groups to embrace smart tech. The area will feature exhibitors displaying smart city technology, as well as a conference track featuring speakers from Bosch, Ford, Nissan, Qualcomm and more.

"With global spending on smart cities projected to reach \$34.35B by 2020, we are excited to announce this dedicated program at CES as the perfect opportunity for companies operating in the smart city space to get together and discuss the future," said Gary Shapiro, president and CEO of the Consumer Technology Association.

—Jeremy Losaw

Wunderkinds

Ashton Cofer is a 15-year-old who invents for the betterment of humankind. He has several patents pending: a device to detect drowsy driving, a method to convert Styrofoam waste into activated carbon for purifying water, and a glove for people with hand tremors. For the drowsy driving device, Ashton was part of a four-student team from the Columbus, Ohio, area that participated in the 2015 eCybermission competition. The team's application uses a Mio Alpha heart monitor to detect a drop in heart rate (the first sign of drowsiness) and alert the driver via an alarm. His team won the 2016 Google Science Fair's Scientific American Innovator Award for the Styrofoam innovation. Ashton gave a Technology, Entertainment and Design talk on the process last December.



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What IS that?

One thing it is not is a duck-billed platypus costume. Honest. It's the **Original TV Hat**, by SKM Industries. "Already own a smartphone or iPod? Now you can watch video in the private comfort of your TV Hat!" the company's web copy says. "Simply place your media device in the secure pouch and watch your favorite shows easily and conveniently!" The hat's built-in magnification system with adjustable focal length "customizes your viewing for amazing home theater quality." Ellen DeGeneres wore one on her show many years ago, affixed a strip of Velcro to the top of the hat, and put a popcorn cup on top.

\$225-\$400

The **fee for a filing a trademark application**, per the United States Patent and Trademark Office. The cost varies, depending upon the filing basis selected and which initial application form is used. The two most commonly used filing bases are "use in commerce," meaning you have already used your trademark in commerce, and "intent to use" for those who have not used the mark but have the intention.

WHAT DO YOU KNOW?

1 Which of these famous Christmas songs is/are copyright protected and not in the public domain?

- A) "Deck the Halls" B) "White Christmas"
- C) "Santa Claus is Coming to Town"
- D) A and B E) B and C

2 **True or false:** Copyrights create a monopoly and provide monopoly rights.

3 According to the United States Patent and Trademark Office, it took 75 years to reach 1 million patents (in 1911). How long did it take to go from 8 million patents to 9 million?

- A) 30 years B) 19 years C) 9 years D) 4 years

4 **True or false:** In 1888, Asa Griggs Candler bought the formula for Coca-Cola from its inventor John Pemberton and several other shareholders for \$550.

5 Which classic gum was trademark registered first—Chiclets, or Wrigley's?



ANSWERS: 1) E. You'd better not infringe; you'd better not try! 2) False. The vast majority of copyrighted works will never have a market and never be commercialized. Without a market, there cannot be a monopoly. 3) D. On April 7, 2015, the 9 millionth U.S. patent was issued (for a windshield washer replacement system), four years after the 8 millionth patent (visual prosthesis apparatus). 4) True. 5) Chiclets was registered on Dec. 5, 1905, Wrigley's on Dec. 9, 1924.

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