

Inventors

JULY 2018 Volume 34 Issue 07

DIGEST

Pet Projects

Inventing for Our
Animal Friends

On the StartupBus

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PRODUCT, CRAFTING A PITCH

Scouting and Innovation

AFTER 100 YEARS, INVENTING
REMAINS A PRIMARY MISSION

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Nothing Can Slow Our Love of Pets

It's been 10 years since the Great Recession, a financial crisis so severe that former Federal Reserve Chairman Ben Bernanke called it the worst in global history. This economic calamity—which officially spanned December 2007 to June 2009—triggered a marked decrease in spending on seemingly everything.

But the recession wasn't even a speed bump for the ongoing acceleration in pet spending. According to the American Pet Products Association, Americans have spent more on their pets in every year since 1994. That streak may continue unabated for a while.

Earlier this year, online lender OppLoans surveyed more than 1,000 pet owners throughout the United States and asked them how much they spend on their pets every month. The company arrived at a figure of \$126.19—and broke down its data to show that Americans spend \$139.80 a month on dogs; \$92.98 on cats; \$116.63 on reptiles or turtles; \$113.89 on birds; \$65 on rabbits, and \$62.53 on fish. One possible surprise is that the monthly amount spent on small mammals such as guinea pigs, hamsters and gerbils—\$251.82—tops the combined amount spent on dogs and cats.

Perhaps most important, the survey said people ages 18-24 outspend all other age groups on their pets with a monthly average of \$173.67, followed by ages 25-34 at \$141.50.

Pet spending in that demographic sweet spot buttresses the notion that our love affair with pets is a lifetime constant. Our need for that kind of companionship is not just something for the single, divorced, widowed or elderly. It's the kind of need that fosters personal growth and helps strengthen families.

You may have heard or read about pets' effects on our moods. One last statistic for you: According to a recent survey by the Human-Animal Bond Research Institute, 74 percent of pet owners said having a pet improved their mental health. That's a pretty good buffer or antidote if you're prone to personal Great Depressions.

So an *Inventors Digest* theme involving inventions for pets was a no-brainer. Anchored by the hunt-and-feed innovation of Dr. Liz Bales, who has 18 years' experience as a veterinarian specializing in cats, it was fun to compile some of the latest and most useful creations designed to help maximize the owner/pet experience. Or, given the dominant role that pets play in so many of our lives, maybe we should say the pet/owner experience!

—Reid
(reid.creager@inventorsdigest.com)

INGENUITY IS AMERICA'S MOST VALUABLE RESOURCE.

DON'T TREAT IT LIKE A CHEAP COMMODITY.

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

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AMERICAN
INVENTOR**

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Contents

July 2018 Volume 34 Issue 7

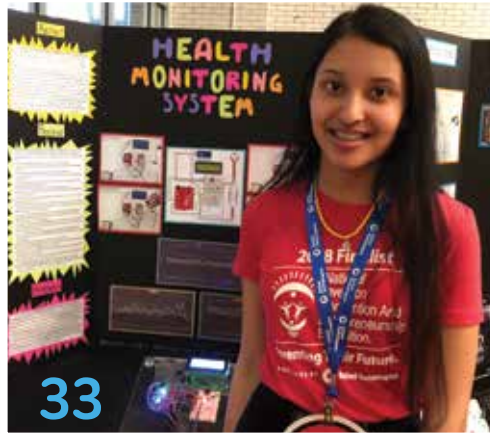


12

30



ON THE COVER
Dr. Liz Bales, Avocado,
and the Doc and Phoebe
Indoor Hunting Feeder;
photo by David Lawrence



33

8

Features

16 **Inventing for Pets**

Latest Innovations for
Dogs, Cats and Others;
Youth Inventions; Using
Instagram Influencers

33 **Young Ideas**

NICEE Event for Inventors

Inventor Spotlights

12 **The Buddy Method**

Duo's Glass a Hit Novelty Item

14 **Beat of a Different Drum**

A Drummer's Fingertip System

Departments

6 **Bright Ideas**

Spotlight on Innovation

8 **Time Tested**

The First Wireless TV Remote

10 **Lander Zone**

When Deals Go Sour

26 **Prototyping**

The StartupBus Ride, Part 1

30 **Rau's Research**

Scouting's Inventing History

34 **IP Market**

Iancu: Help Is On the Way

38 **Patent Pending**

Key Question: Will it Sell?

40 **Eye on Washington**

Facebook's Latest Issue is
Counterfeit Goods; Is SCOTUS
Willfully Killing Patent System?

46 **Inventiveness**

Focus on the Fun and Fascinating



BRIGHT IDEAS

Parásole

3D RECOVERY SOCKS

wear.parasolesocks.com

The socks combine the comfort and freedom of a compression sock with a supportive insole, and traction and protection of an outsole.

Parásoles stretch to help adapt the natural curves of your feet to hard, flat ground. They feature arch support, and keep feet cool and ventilated via a breathable mesh with sweat-wicking yarns. They also have antimicrobial protection to help prevent odor and can be wiped clean instead of washing them.

The socks have a future retail price of \$49. Shipping for crowdfunding backers is to begin in August.



HeroClip

HYBRID GEAR CLIP WITH BUILT-IN HOOK

myheroclip.com

HeroClip is designed to free your hands. Its largest version holds up to 60 lbs., rotates 360 degrees, folds at two joints for maximum versatility and has a rubber tip for grip. When not in use, the hook folds securely on to the clip.

Ideal for campers, the product hangs just about anywhere and is available in three sizes. All weigh 2 oz. or less; the small and mini versions hold up to 50 lbs. and 40 lbs., respectively. Accessories include Hero Socks, an insect-repelling bandana, and Luci Lantern.

HeroClip sells for \$19.95 on its website, with shipping to crowdfunding backers set for August.

GingerLead

DOG SUPPORT, REHABILITATION HARNESS

gingerlead.com

GingerLead is an integrated leash attached to a collar for control of younger, more active dogs; those recovering from surgery; or it can be used as a chest harness for older or disabled dogs with limited mobility or balance that require additional support. It is especially useful in helping dogs up and down stairs or in and out of vehicles.

The leash is adjustable for height. The support pad combines two types of padding—one for cushion, the other to prevent the sling from bunching up. The leash can be detached for machine washing, or if your dog does not require the leash.

Prices range from \$35.95 to \$65.95, depending on the size of the dog.



**“Scientists may have sophisticated laboratories,
but never forget ‘Eureka!’ was inspired in a bathtub.”**

—TOBA BETA, AUTHOR AND POET

ElectroSpit

MOBILE TALKBOX

kickstarter.com

This lightweight, portable device gives you new ways of producing melodic and musical sound while forming words, using ElectroSpit's ESX-1 Mobile Talkbox App. It updates the talkbox, an effects system made up of an instrument amplifier and tube used by musicians in combination with their mouth to shape and alter the frequency of sound.

The iOS, Android-compatible app detects any song's key and plays in perfect pitch. It connects your keyboard through Bluetooth to access the best talkbox sounds and is compatible with any synthesizer or guitar.

ElectroSpit's future retail price will be \$400, with shipping set for December.



He Triggered ‘TV Miracles’

EUGENE POLLEY’S WIRELESS REMOTE CONTROL IS A MODERN-ERA INSTITUTION **BY REID CREAGER**

IT WAS STILL FRESH AND WONDROUS, this technological landmark of a giant electronic box full of tubes that displayed moving images for entertaining and informing the world. So imagine the added allure of “TV miracles.”

That was Zenith Radio Corporation’s ad campaign in 1955 as the company promoted its new television with Flash-Matic tuning. The TV featured a green ray gun-like device with a red trigger, a “flash tuner” that was billed as “absolutely harmless to humans!”

“Without budging from your easy chair you can turn your new Zenith Flash-Matic set *on, off, or change channels.*” Even better, the gun-shaped apparatus was an intentionally symbolic showpiece during this early era of TV Westerns: “You can even shut off annoying commercials while the picture remains on the screen.”

Zenith engineer Eugene J. Polley’s innovation—the world’s first wireless TV remote control—was an instant hit, sparking the sale of about 30,000 units. This was especially impressive in light of the fact that a TV was still viewed as a luxury, and the remote added \$100 to the set’s already daunting \$500 price tag.

Not an easy path

In today’s world, with hundreds of cable channels and our escalating reliance on push-button convenience, the wireless TV remote is Polley’s defining career achievement. It came despite a challenging upbringing and struggles for recognition even after his breakthrough.

Born on Nov. 29, 1915, in Chicago, he was raised mainly by his mother after his bootlegger father left the family. He attended the City Colleges of Chicago and Armour Institute of Technology but left before graduating, instead taking a job as a stock boy with Zenith Radio Corporation in 1935 to help his mother during the Depression. From there, he leveraged his mechanical skills to move up to the engineering department.

Polley’s signature innovation followed decades of wireless creations in other fields by notables such as British physicist Sir Oliver Lodge and Nikola Tesla—the latter who radio-controlled a boat during an exhibition at New York’s Madison Square Garden in the late 1890s. In 1950, Zenith developed its first TV remote control, “Lazy Bones.”

According to Zenith, the remote used a cable that ran from the TV set to the viewer; a motor in the set operated the tuner through the remote control. By pushing buttons on the remote control, viewers turned the tuner clockwise or counterclockwise, depending on whether they wanted to change the channel to a higher or lower number. The remote control included On and Off buttons.

But consumers quickly grew tired of the intrusion of a cord, especially the possibility (and reality) of

Eugene Polley’s innovation ended the problem of obtrusive TV remote cords on sofas and chairs, not to mention the tripping hazard on the floor.



“The Zenith Flash-Matic” makes me think maybe my life wasn’t wasted. Maybe I did something for humanity—like the guy who invented the flush toilet.” —EUGENE POLLEY

tripping over it while it lay on the floor. Additionally, Eugene F. McDonald Jr., Zenith's founder and president, wanted a way to limit the intrusion of TV commercials.

Polley's creation addressed both issues. Flash-Matic operated via four photo cells, one in each corner of the TV screen. The viewer used a "highly directional flashlight" to activate the four control functions, which turned the picture and sound on and off and changed channels by turning the tuner dial clockwise and counter-clockwise.

Polley once told the *Baltimore Sun* that Flash-Matic "makes me think maybe my life wasn't wasted. Maybe I did something for humanity—like the guy who invented the flush toilet."

Short-lived fame

Although Polley's invention is still used in principle today, it needed refining as well. The remote had to be pointed precisely at a certain point on the TV screen to work, and because it had no protection circuits it was susceptible to turning the dial randomly if the TV set sat in an area where light or the sun shone directly on it.

After just one year, Flash-Matic was replaced when Zenith coworker Robert Adler came up with a remote called Space Command. The new device—which made clicking sounds, spawning the use of the term "TV clicker"—eschewed light waves for inaudible, high-frequency sound waves to control the commands.

Even though something like jingling keys or coins could set it off occasionally, Space Command technology was the standard in remotes for more than a quarter-century and resulted in the sale of more than 9 million sets, according to the *New York Times*. (Sonic-controlled, infrared and radio-frequently models took over in succeeding decades.)

Space Command was such a game-changer that some media outlets erroneously credit it as the first wireless TV remote. This didn't sit well with Polley, a lifelong Chicago-area resident who told the Chicago Tribune in 2006 that "not only did I not get credit for doing anything, I got a kick in the rear end."

In 1997, Polley and Adler received an Emmy for their work in pioneering TV remotes. Two years later, Polley received the Masaru Ibuka Consumer Electronics Award from the Institute of Electronic and Electrical Engineers.



But Polley was no Flash in the pan. He amassed 18 U.S. patents during his 47-year career as an engineer and worked on radar advances for the U.S. Department of Defense during World War II. He also helped

develop the push-button radio for cars and the video disk, the precursor to DVDs.

According to Zenith Electronics spokesman John Taylor, Polley routinely showed off the Flash-Matic to visitors at his assisted-living facility up to his death in 2012 at age 96. "He was a proud owner of a flat-screen TV and modern remote," Taylor said, but "he always kept his original remote with him." 📺

Polley designed the remote to look like a pistol, with the idea of "shooting down" commercials by using the mute button while the picture remained on the screen.

INVENTOR ARCHIVES: JULY



July 13, 1944: Erno Rubik, a Hungarian inventor who invented the Rubik's Cube that was a 1980s fad, was born.

According to the Lemelson-MIT Program, Rubik was an interior design teacher who often used physical models and materials to teach concepts in construction and design. He had a particular interest in three-dimensional objects. For the rounded elements at the center core of the cube, he reportedly

drew inspiration from the stones by the banks of the Danube River.

Rubik patented the device in 1975 as the Magic Cube and brought it to the Hungarian toy marketplace in 1977. At least two other inventors patented similar cube designs around that time, apparently unbeknownst to him. Theirs used different mechanisms for holding the cubes together.

When Deals Go Sour

PROMISING PROSPECTS THAT SUDDENLY END ARE A MYSTERY—OR ARE THEY? **BY JACK LANDER**

I WAS FEELING pretty good about a medical invention for which I had filed my patent application. I also had joined the AARC (American Association for Respiratory Care) so that I could attend its annual congress and meet with high-ranking marketing executives. The meeting was held in New Orleans—a fringe benefit.

There were plenty of exhibits and fascinating products that increased my knowledge of the field as I walked the floor of the hall, the size of a football field. I met and talked with three directors of marketing, and one company president.

There were no gatekeepers to guard the execs at this show; just walk into a booth, read the name tags and shake hands with a V.P. you'd almost certainly never meet if you called on him or her at the home office. You'd be handed over to a second- or third-tier employee who would screen you and your idea, and maybe pass your sell-sheet to the director if you were lucky. One inventor told me he was screened by an intern. I wonder where that sell-sheet ended up?

One of the marketing directors was clearly enthused about my inven...., excuse me, my product. (My business card reads "product developer," not "inventor.")

'New best friends' vanish

Two days passed, and I got a call from the director. He invited me to come to his company and discuss my product with him, the tooling engineer and the production manager. The discussion went well, and all parties seemed optimistic. He asked whether I would leave my prototype so they could evaluate the concept more completely. Yes, of course I left it: That's what prototypes typically are for when you have a "live one" patting you on the back.

More phone calls, and all was proceeding as expected. Then, a couple of weeks into this period

of infatuation, my "new best friends" jilted me. No phone calls; no answers to e-mails; I was talking only with secretaries when I phoned, and I received no return calls. I figured the deal was dead. But why?

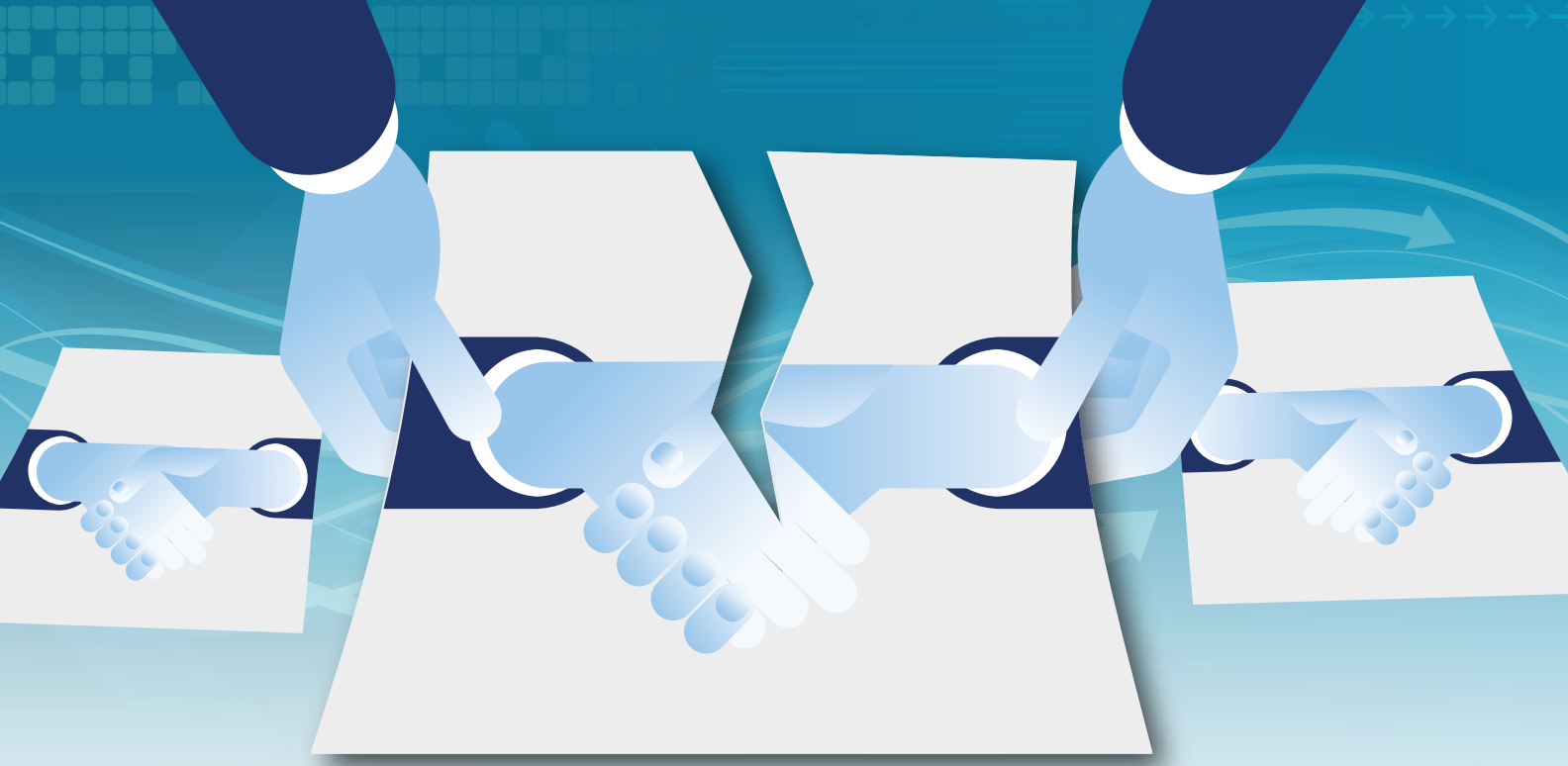
I wrote to the director of marketing, stating that if I didn't hear from him within one week I was withdrawing my offer to license my patent. No response. The company's lawyer no doubt took the position that any reply, no matter how seemingly polite and innocent, could result in liability for the company.

As for why company officials changed their minds, my best guess is that the director's boss killed the deal because (take your pick): He doesn't like inventors; he likes products "invented here" (in house); he doesn't want to diminish his annual bonus by investing in a new product that won't pay back its cost for a couple of years, if ever.

But there is another possible reason: Companies that are patent savvy will always order a "freedom to operate" patent search before signing a licensing agreement. This search is intended to ferret out any inventions that accomplish the same thing that your invention does, even though such designs would not infringe your patent. In other words, potential competition.

More important, it is also intended to assess the quality of your patent. Is it bullet-proof to the extent that no potential competitor will risk infringing it?

Patent lawyers try to get the strongest possible patent for you. Due to the inherent difficulties of claims crafting and interpretation, they often get a patent that appears strong but when viewed from a "pirate's" point of view is vulnerable. According to a PwC 2017 patent litigation study, you and I (the patentees) have only a 33 percent chance of saving our patent if it is challenged. Thus, our potential licensee knows that if it is challenged, the chances are two to one that he or she will end up with worthless paper that was once a bona fide patent.



Deals can go bad even when the preliminaries seem to be settled and the papers are on the conference room table waiting for signatures.

A fateful lunch break

So, that's how it goes. Am I bitter about my hopes being dashed? No. Disappointment is part of the process, and anger or resentment only get in the way of ongoing creativity. I carried on and was soon pursuing another invention.

Deals can go bad even when the preliminaries seem to be settled and the papers are on the conference room table waiting for signatures. One of my clients was all set to sign the agreement that was drafted by her licensee's attorneys. The terms had been agreed to verbally by telephone.

As a final step, we suggested that we break for lunch, which would give us time to go over the licensing agreement. This was the "trust but verify" phase. The terms of the contract appeared to reflect the verbal agreement except for two things.

My client had stipulated that the main components of the product had to be made in the United States. They must have just forgotten that item. The agreement also has a list of duties that my client would perform for the licensee. These were reasonable: advising on design improvement, attending trade shows, developing answers to frequently asked questions, etc. The list was written as previously agreed to verbally except for one addition. The licensee added that if the inventor defaulted on any of these obligations, the licensee would have

the right to use her patent without paying her the agreed royalty.

Back at the table, we argued these two points. The licensee wouldn't back down. This is the shady car dealer tactic. The dealer assumes that your mouth is watering to get behind the wheel and drive out. He or she figures that it's OK to add a few surprise charges, and you'll cave. We walked away from the licensing agreement. It wasn't resuscitated.

Looking back

Could we have avoided this unfortunate ending? Maybe. We should have asked that a copy of the final written agreement be sent to us for our lawyer's review before we traveled to their offices for the signing. If they had then included those objectionable amendments, our lawyer would have been the "bad cop" and possibly preserved the civil relationship we had been enjoying all along.

The best-laid plans of mice and men oft go astray, they say. No humorous last lines this month. 🍷

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.



Want a Drink?

Use the Buddy Method

GLASS THAT ATTACHES TO A BEER OR WINE BOTTLE
IS A HIT NOVELTY ITEM **BY EDITH G. TOLCHIN**

WHEN YOU'RE READY to kick one back, who would have thought to make it more fun than pouring a glass of one's spirit of choice?

The Guzzle Buddy® is a glass that attaches directly to your beer or wine bottle. Just insert the Guzzle Buddy by screwing it directly into the top of your bottle. The co-inventors, Jennifer Sullivan and Randy Rothfus, are a sister and brother-in-law team who have known each other since preschool in Carlisle, Iowa. The two recently secured a deal with Daymond John from "Shark Tank."

Sullivan has a degree in geology and worked in the copper industry; Rothfus has three children's books currently on Amazon.

Edith G. Tolchin (EGT): How did this invention come about?

Randy Rothfus (RR): We both love wine, so one day Jennifer saw an old sitcom that had a character holding a glass attached to the top of a bottle. Naturally we had to have it, so we scoured the internet and no such product existed. That's when we decided we would make our own.

EGT: Of what is the Guzzle Buddy made?

RR: We have the borosilicate hand-blown wine and beer glass we manufacture in China, and we have the Tritan copolyester unbreakable plastic wine and beer glasses made in the United States. Both glass and plastic are BPA-free, freezer safe and dishwasher safe.

EGT: How many prototypes did you need to make?

RR: This proved to be the most difficult part. Of course, we saw a TV prop, but designing it for commercial availability to the public was where the engineering was involved. We had specific requirements. We needed this to attach securely to the opening of as many bottles as possible. There is a bigger diameter variance than you might imagine between wine, beer, soda and cider bottles.

We also needed it to provide a seal so it didn't leak when drinking. That is where we got the idea to create a tapered LFGB silicone sleeve over a glass stem, which would engage a wide variety of bottles and fit securely.

We also needed to have adequate flow of liquid from the bottle into the glass. This was another obstacle because we needed the thickness strength of the glass stem, but we didn't want to compromise the flow. The greater the thickness, the lesser the flow. We went back and forth for over five months and

Randy Rothfus and Jennifer Sullivan overcame many obstacles in the prototyping process for the Guzzle Buddy.



The U.S. patents cover claims ranging from how the glass attaches to the bottle to the way it aerates wine during consumption.

approximately 10 prototypes until we finally made the decision to go into production. Once we got them into the customers' hands, we still tweaked the sleeve based on feedback we received to fit an even broader array of glasses and make it easy to put in and out of bottles. We designed the plastic versions to utilize the exact same silicone sleeve as the glass versions.

Many people have asked us if there is a valve that prevents the liquid from going back into the glass. No, there isn't. It is a free-flowing design.

EGT: Tell us about your patents.

RR: We have registered design and utility patents in the United States. These cover a wide variety of claims, ranging from the way the glass attaches to the bottle to the way it aerates the wine during consumption. We also have patents in the E.U., U.K, Canada and patents pending in China.

EGT: How are you selling? To retail or on your website, or both?

RR: We sell from our website, Amazon.com, Amazon.ca, Amazon.co.uk and all European Amazon channels. We are in Brookstone, Hammacher Schlemmer, Francesca's, a growing list of small independent boutiques, novelty shops, and even Ace Hardware stores! We have sold product almost everywhere from Germany to New Zealand and beyond.

EGT: Tell us about your "Shark Tank" experience.

RR: We were approached by "Shark Tank" producers to see if we had interest. That's like a foot in the door, but then you need to go through a process of vetting and discussions. Many people apply or attend a pitch day, but not many are picked—and as you move forward, they cut companies out until they have a group they want to film.

Once we made it, we were incredibly excited but also scared and nervous to go in front of the sharks. The one thing I can say to people looking into going on "Shark Tank" is that you'd better know your numbers and your business. One small mess-up, and it's like blood in the water.

EGT: What is your marketing strategy?

RR: We do very little marketing. We have Twitter, Facebook and Instagram accounts (@guzzlebuddy), and we try to provide the best content we can and interact with customers, making it a fun experi-

ence. Our product is quite viral when compared to other types of glassware. All it takes is for one video to come out, and sales go through the roof.

EGT: Any plans to add to your product line?

RR: We are very focused on getting the Tritan plastic versions to market. We are manufacturing them and pre-selling them now; we hope to begin fulfilling orders soon. We do have other ideas swirling around in our heads, but we need to stay focused for now.

EGT: What advice would you give our readers?

RR: Everyone says, "Oh, I could have thought of that," or "I saw this—I should make it." I think the reason a lot of people say that is because it sounds simple. But in reality, you have to be willing to invest a lot of time, money and effort into these pursuits. You have to be willing to take that idea and fail multiple times before you get it right, and I think a lot of people would give up early or not even try. 🍷

Details: guzzlebuddy.com



Guzzle Buddy beer and wine glasses feature a free-flowing design with fun in mind.

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.



The Beat of a Different Drum

FINGERTIP PLAYER SYSTEM, USING COLOR SENSING, MAKES FOR EASIER PRACTICE **BY JEREMY LOSAW**

DRUMMERS seemingly never stop drumming, and Steven Dourmashkin is no different. Between gigs and practice sessions, their fingers are always pulsating and working out a beat—tapping on tables, their thighs, or whatever else happens to be within arm span.

Dourmashkin was an undergraduate at Cornell University when *ba-dum*: His aha! moment arrived via a portable wireless drum kit to help drummers purposefully practice between sessions, without having to drag a conventional drum kit around with them.

“The idea was to make drumming more accessible,” recalls Dourmashkin, who founded Specdrums with Matthew Skeels through Cornell’s eLab program. “You can’t really take it around, because it’s so big with so many pieces. It’s also expensive. ... A lot of people can’t get a drum set to start learning the drums.”

Specdrums is a fingertip music player system that uses color sensing rings to play different tones. The rings slide over any finger you want and are triggered when they come in contact with any surface with a recognizable color. The system is driven from an app that allows the user to change the tone of each ring to different instruments such as drums, the piano, or even animal sounds.

The system can also be used as an input to a music recording software, such as GarageBand, so you can create your own masterpieces. The system supports up to 10 rings, one for each finger. Specdrums are iOS and Android compatible.

An unorthodox prototype

Dourmashkin’s first prototypes were built with developer electronics. He used an Arduino controller and an optical black and white sensor on the ring. The prototype strapped to the wrist, with wires running from the wrist to the ring.

Although cumbersome, this proof-of-concept prototype allowed him to test the idea. Eventually he found a Bluetooth developer board and an optical color sensor, and the product started to come to life. This allowed him to run the ring sensor untethered and a smartphone could play the tones, which allowed him to show it off to other drummers.

To make a viable, finished-looking product, Dourmashkin needed to miniaturize the electronics. This meant a custom PCB needed to be designed. Fortunately, he had a background in electronics and embarked on the design himself.

“I learned Eagle, which is a free PCB design software. At first it was definitely really bad, but I had a mentor to help me work through it,” he says. “I learned as I went along.”

Steven Dourmashkin
cofounded Specdrums
while an undergraduate
at Cornell University.



“You can’t really take (a conventional drum set) around, because it’s so big with so many pieces. It’s also expensive. ... A lot of people can’t get a drum set to start learning the drums.” —STEVEN DOURMASHKIN



He also got extra time to work on the product by making the sensor the focus of his senior design project. By leveraging his talents and those of fellow students, he was able to keep his total development costs low and was able to fund the development himself.

Dourmashkin won a grant from a start-up accelerator in Ithaca, New York, that gave him the funds to file patents. At first he used a law firm to file a provisional patent application and used his senior thesis as the bulk of the documentation. He then converted it to a full utility filing within the year, as allowed under the rules governing PPAs.

He feels that patent-pending status has helped him market and pitch the product, as well as deter fraudulent products: "It looks simple ... but in a way, you can imagine there could be a knockoff," Dourmashkin says.

Wins fuel progress

After graduation, he moved to Boulder, Colorado, and continued work on the Specdrums. He produced a small run of 50 units. The PCBs were made by Texas manufacturer Macrofab, and he cast silicone rings himself by hand. Dourmashkin soft-launched the product by creating an e-commerce site, and sold all of the first run of units.

He launched the product in earnest on Kickstarter last August. More than 1,900 backers blew away his modest \$15,000 funding goal; the campaign finished at \$188,944.

Remarkably, he did most of the public relations work for the campaign himself, researching media outlets used by successful campaigns and reaching out to them beforehand. He was also featured in the Kickstarter email newsletter, which also helped boost the raise.

Dourmashkin was able to continue manufacturing the product in the United States. He used Protolabs in Minnesota for the injection-molded housing; Macrofab continued to manufacture the circuit boards and also took on the assembly and packaging. Ever the bootstrapper, the company CEO has a small warehouse space near his home and fulfilled all of the Kickstarter and subsequent pre-orders himself.

Specdrums' future is a bright rainbow of colors—especially in light of successes in recent competitions that helped build publicity and funding. The product won the 2017 Red Bull Launch Institute start-up competition, which allowed his team free entry to exhibit the technology at Tech Crunch Disrupt in San Francisco. The team also won a \$75,000 grant from the New Venture Challenge championships in Boulder on April 4 this year.

Dourmashkin told the University of Colorado Boulder that the money would allow him to hire more people and create more inventory. "We can scale up a lot more," he said. "We haven't raised any money yet. This is big."

The next focus is getting a curriculum finished for educational use of the product, as well as getting Specdrums into major retailers. Dourmashkin's goal is to have the product available on Amazon by late summer. "Ba-dum, tssss." 🎧

Details: specdrums.com

Specdrums' color sensing rings slide over any finger you want and are triggered when they come in contact with any surface with a recognizable color. The system app lets the user change the tone of each ring to different instruments.

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/.





Leveraging **The Thrill of the Hunt**



VETERINARIAN'S INVENTION
PROMOTES CAT HEALTH
BY ENCOURAGING ITS NATURAL
INSTINCTS **BY DON DEBELAK**

LIZ BALES had 14 years' experience as a veterinarian specializing in cats, so there wasn't much she didn't know about them. But when "the Catvocate" learned during the September 2014 Atlantic Coast Veterinary Conference that euthanasia is their leading cause of death, she was shocked.

Not urinary disease. Not cancer. Not accidents. Owners often become fed up with behavior problems such as urinating outside of the litter box, vomiting, waking them up in the early morning to be fed, and aggressive/destructive behavior. So they take their cats to shelters—where, according to americanhumane.org, 71 percent of them are euthanized.

"That was my lightning-bolt moment," she recalled. "Here I was, devoting my life to the care and welfare of cats. But I wasn't doing anything to prevent the No. 1 cause of death, and neither was anyone else. ... These people at shelters are doing the best they can, but this isn't the result we need."

Dr. Bales' evaluations of these problems in private practice found the cats were usually healthy. The veterinarians at the conference discussed the issue, and her takeaway was that cats are natural-born predators whose instincts were being stifled. This causes a tremendous amount of stress that cats act out via inappropriate behaviors.

She spent the three-hour ride home from Atlantic City "with a firm idea that the solution was to stop inhibiting cats' natural behavior but instead encourage it.

"Cats eat five to 20 mice a day. Their stomach is the size of a ping-pong ball. Let's replicate this and help cats hunt, catch and play before eating a small portion of food at least five times a day."

Dr. Bales knew the product she wanted: five mouse-like containers that could hold cat food—filled and hidden at one time throughout a home or apartment so the cat can find each one on its own schedule—with a fabric outside that wouldn't unravel. This was the genesis of the Indoor Hunting Feeder.

As with most inventors, Dr. Bales' first thought was the great idea. The second was, "Now what?"

Starting to move

She caught a break here. "While I was talking to a neighbor's father at dinner, I learned he was an inventor and had started a medical device company but was now retiring," she said. He liked her invention idea and said he and his son would see how they could help.

A little later, in October 2014, the father and son sent a prior associate of theirs, Phoebe Kearney, to her door with a variety of parts and components to start making models. Dr. Bales didn't just find a model maker; she found her partner.

Both of them knew it. "While meeting with Liz for the first time and learning how we are depriving our cats of their basic needs to live happy healthy lives, it all made so much sense," Kearney said. "As an animal lover, I knew helping to bring her solution to life would not only be revolutionary but would be saving the lives of cats—which is what truly makes it special. We had to do this."

But making the model was more challenging than expected. Dr. Bales explained: "The product needed to be super-light, oval in shape, similar to most prey and have an external fabric that had the tactile feel of prey, but that wouldn't degrade and become a hazard to a cat."

Some additional design key criteria were that the cat should be fed five times a day and that 1.6 tablespoons of food was an ideal size for their stomachs. This would help manage weight—obesity in cats is a persistent problem—while promoting exercise, alleviating anxiety and preventing digestive issues.

Dr. Bales and her partner persevered, and about a year later they came up with what they felt was a workable model of what eventually was called the Indoor Hunting Feeder. They also developed their original kit format: five such feeders that could be filled once a day and hidden around the house.



The Doc and Phoebe Indoor Hunting Feeder has five mouse-like containers that can hold cat food, filled and hidden at one time throughout a home so the cat can find each one on its own schedule.

**\$15.1
BILLION**

The amount spent on items such as beds, collars, leashes, toys, travel items, clothing, food and water bowls, and other accessories in 2017, per the American Pet Products Association.

5 MORE COOL INVENTIONS FOR CATS

Kitty City

Think amusement park without the high prices. Kitty City's modular design allows you to add components over time that can include a tower, hideaway cave, tunnel, climbing hill, sleepy corner, peek-a-boo passage and slumber bed. (If you have enough space, this could get really interesting.) These components, made from reinforced pipes and durable fabrics, are apparently easy to assemble and have built-in scratching posts and detachable toys.



Modkat Litter Box

This certainly isn't the first product to update and/or redesign the traditional litter box, but it's one of the more stylish offerings—and practical as well. Modkat has a top-entry lid that allows for a fully enclosed base, ensuring that no matter escapes regardless of what your cat does inside. The lid is also a walk-off mat, keeping your floors practically pebble free. The lid swivels open to ensure that any stray litter falls back inside. When rotated to 90 degrees, it lifts straight off to provide full access.



Catit Senses 2.0 Wellness Center

Cat pampering takes many forms here, providing 360 degrees of relaxation and grooming. Small and large cats can give themselves a head, neck, face and body massage, and scratch hard-to-reach areas. The Wellness Center also features dual self-groomer brushes to collect loose hairs, as well as a catnip herb container.



Frolicat BOLT

Frolicat fights the ever-present issue of cat obesity with a range of exercises to get your pet moving and stimulated, even when you're not around. Your cat can chase and pounce at an interactive laser toy that you can either hold yourself or place on a surface and set the timer to 15 minutes. In automatic mode, the laser moves in random patterns for hands-free play.



Pets Best Products Hidden Litter Cat Box

Some cat owners don't want to look at a litter box, no matter how 21st-century it looks. The opening of the Tuscany model, made to look like a terracotta planter, can be turned toward the wall to conceal the litter area completely. This also gives your cat privacy when toileting. The fake planter contains hidden litter trays that stop litter scatter, with a filter to minimize dust and odor.



Market testing

A graduate of the University of Pennsylvania School of Veterinary Medicine, Dr. Bales took her concept to some of the professors there who were leaders in the field, including Dr. Carlo Siracusa, as well as the nutrition department at the university. Then she sought the advice of other leading cat veterinarians who included Drs. Tony Buffington, Margie Scherk and Ilona Rodan.

After receiving positive feedback, she took another step to validate the product by trying it out in 25 homes of cats with varying arrangements—homes with one, two or many multiples of cats. She didn't want to test the product with her patients or close friends, fearful she wouldn't get objective feedback. So she went to friends of friends. The results were great: Cats' behavior problems dropped dramatically, in many cases disappearing altogether.

The testing with cat families also allowed Dr. Bales and Kearney to see how the product worked. Building on their initial plan to sell a kit with five Indoor Hunting Feeders—the minimum number of times a cat should be fed each day—they found they needed two additional parts. The first was a training mouse, a version where food falls out easily. "Some cats didn't immediately get the idea of the product, but they caught on quickly with the trainer," Dr. Bales said.

The second item was a portion filler that matched the size of a cat's stomach. Subsequent testing also showed that people who preferred to feed moist cat food could still use the Indoor Hunting Feeder by providing that food in a bowl, and using just a dried or freeze-dried treat in the five Indoor Hunting Feeders. These cats get the benefit of the hunt without adding too many calories.

Production and sales

Dr. Bales and Kearney used 3D printing parts for testing, but for production they wanted a better product



“Cats eat five to 20 mice a day. Their stomach is the size of a ping-pong ball. Let’s replicate this and help cats hunt, catch and play before eating a small portion of food at least five times a day.” — DR. LIZ BALES



that would require molds and other expenses. They launched a Kickstarter campaign in early 2016 with a \$36,000 goal, offering a future shipment of NoBowl Cat Feeder Systems or T-shirts.

“We hit our initial target in four days and ended up with \$136,000,” Dr. Bales said. “We followed up with a campaign on Indiegogo and ended up with a total close to \$250,000. That allowed us to go into production, and we were able to deliver every product to our investors on time.”

Dr. Bales started selling on the internet and then targeted the veterinarian market. “We marketed the kit as a behavior solution to veterinarians at trade shows,” she said, “and sales picked up as our story was covered in a string of veterinarian trade magazines.” A half-page story in the *New York Times* was a huge boost for sales.

She had an early entry into the retail market as she picked up some small retailers at the shows. In August 2016 she attended the SuperZoo trade show, the United States’ largest for pet retailers, and her innovation won Best New Cat Product.

Dr. Bales lives in the Philadelphia area. Her company was chosen out of hundreds of applicants to be one of four inaugural companies in The Philadelphia 76ers Innovation Lab. Job One was to rebrand the product for the end user—the cat owner.

Working daily with Seth Berger and Rhyann Truett from the innovation lab, the team dropped the NoBowl Feeding System name and went to Doc & Phoebe’s Cat Co. The product, which has a design patent granted and a utility patent pending, is called the Doc and Phoebe Indoor Hunting Feeder. It’s priced at \$39.99.

Dr. Bales and company members planned to head to SuperZoo’s 2018 show in hopes of picking up more retailers, maybe some sales reps and hopefully meeting buyers from Petco and PetSmart. 🐾

Details: docandphoebe.com

OTHER PET INVENTIONS

Acrylic Tank Manufacturers aquarium headboard

If water is soothing to you, this incredible headboard that doubles as a 650-gallon aquarium should wet your appetite. (Couldn’t resist.) The headboard can be customized and adapted to fit above your bed, providing a spectacular focal point and endless conversation piece. One possible drawback is the price—\$11,500—which, for some, may not be conducive to a good night’s sleep.



K&H Pet Products Bird Thermo-Perch

Air conditioning alone isn’t harmful to a pet bird, but it’s not ideal. Drafts from A/C units pose a particular health risk (never put your bird cage near a vent). The Thermo-Perch uses a safe, low voltage to provide a consistent source of warmth. Easily attached to a wire cage, it’s thermostatically controlled to maintain optimum body temperature and help reduce stress. The Thermo-Perch pictured is the sand version, with a sandy coating that keeps birds’ nails and feet healthy.



Hamster paper shredder

London-based design consultant Tom Ballhatchet came up with this environmentally friendly idea more than a decade ago. The hamster has to run for 45 minutes to shred one sheet of paper, which then falls to the base of the hamster cage and provides fresh bedding. It’s not available to buy—probably in part because besides the obvious drawback of time, there’s this: Hamsters’ teeth never stop growing, and they’re always gnawing on something. So just put the paper in the cage and let the hamster do the gradual shredding that way.





10 Questions with Rob and Megan Hoover



COUPLE'S INNOVATION, K9 BATH BUDDY, DISTRACTS RELUCTANT DOGS AT BATH TIME **BY EDITH G. TOLCHIN**

C HARLOTTE-AREA couple Rob and Megan Hoover were frustrated with the dirty chore of giving their dogs a bath, so they invented K9 Bath Buddy. Simply smear peanut butter or some other treat your dog likes on the Bath Buddy, affix the patent-pending device to the wall of the bath with the help of the attached suction cup device, and the dog is happily distracted while you wash him or her.

In their day jobs, Rob is a marketing director for a beverage company; Megan is an IT support specialist. "Our idea of date night for the past few months has been printing invoices and fulfilling orders," Rob jokes.

The product sells on the Bath Buddy website and on Amazon, with Rob and Megan in ongoing talks with several retailers. *Inventors Digest* regular contributor Edith G. Tolchin, a former longtime cat owner, learned about the innovation on Facebook. She interviewed Rob and Megan about how they launched their first invention and the exciting possibilities ahead.

How did your invention come about?

Rob: We have two dogs, Gia and Napoleon, and we struggled with them when it comes to bath time. We

stumbled across a video on social media of a dog owner who solved the problem of difficult dog bath times by smearing peanut butter directly onto the shower wall to distract the dog while getting a bath. We thought the idea was great, but the execution could be improved.

We wanted something that allowed the use of peanut butter as a distraction but would be a bit more sanitary (bath walls typically have bacteria, soap scum and more) and easy to clean up. So we just looked at each other after watching the video and said, "Let's do this."

If a dog doesn't like peanut butter or can't have it, what other food can be used?

Megan: We have heard from some of our customers that peanut butter isn't an option for them for several reasons. One, some people have peanut allergies and cannot be near peanut butter. Two, some dogs just don't like peanut butter. But there are lots of other options besides peanut butter. For example, we use pumpkin purée (mixed with a little coconut oil to be extra healthy) sometimes instead of peanut butter.

But truly, any spreadable dog-friendly food will



work with Bath Buddy. (The couple note to avoid any foods that contain the sweetener xylitol. Most major brands of peanut butter do not use xylitol in their products, but check to make sure.)

How did you make your prototypes, and how many did it take?

Rob: Because we were new to all of this, we had no idea what to do. We got all of our materials from the local craft store, cleared off our kitchen counter, and made several attempts—three to four—to get a mock-up of what we envisioned in our minds. We started with modeling clay, but that failed miserably. Then we tried casting and molding, but that failed just as badly. We ended up using foam board and pieces of a baby toy to create the first prototype. My history of tinkering came in handy here.

I assume the product is made of silicone rubber. How are you handling the manufacturing?

Rob: We have a wonderful manufacturing partner overseas in Hong Kong that specializes in silicone baby products, and they were very helpful in helping us bring this idea to reality. Before this, we had no idea about the ins and outs of working with overseas manufacturers and certainly had no experience with the silicone industry.

Have you encountered any obstacles in product development?

Rob: Luckily this process was super smooth, and having a great manufacturer played a big part. It's hard to believe, but our first round of samples was exactly what we wanted so there was no back-and-forth between us and our manufacturer to make changes. If we ever invent something else, we are pretty sure it won't be that easy again.

Have you used any crowdfunding sites?

Rob: We ran a successful Kickstarter campaign earlier this year that doubled our funding goal. We got off to a relatively decent start thanks to a boost from our friends and family, and we could see early on that we would probably finish the campaign right about where we needed to be.

With three days left in the campaign, a large media outlet that I had reached out to weeks before did a feature on us without us even knowing. We started seeing pledges coming in at a rapid pace—much faster than we had seen since we launched—but we had no idea why. It wasn't until we were tagged in a post on Facebook mentioning that article that we were able to figure out the sudden jump in pledges. We doubled our goal in the last three days (totaling \$6,711), thanks to that featured article.

Megan and Rob Hoover of Charlotte dreaded bath time for their dogs Napoleon (held by Rob) and Gia. Now they smear a dog treat on their patent-pending product, affix the piece to the wall of the bath with the attached suction cup device, and their dogs are happily distracted.



“Because we were new to all of this, we had no idea what to do. We got all of our materials from the local craft store, cleared off our kitchen counter, and made several attempts ... to get a mock-up of what we envisioned in our minds.”—ROB HOOVER

But that presented us with a new challenge: The inquiries and pledges were pouring in, and we knew we couldn't just end the campaign and lose the momentum we had from the article. So we scrambled to get our website finished and ready to go, so that as soon as the Kickstarter campaign ended we could direct all traffic to the website. We literally had the website ready to go two hours before the Kickstarter campaign ended. Talk about a close call!

How is the product packaged and sold? Who designed your logo?

Rob: We currently ship our products directly to our customers in custom-branded poly mailers. We do our best to personally write a “thank you” to each customer on our packaging insert that ships with each Bath Buddy. We make it a point to reply to every single website message, email and social media message we get. One of our favorite things that has come out of this is talking with our customers—people who we don't even know personally, but we feel like we know them because they believe in us, our mission and our product.

When we go into retail, we have retail-specific packaging. Our logo was created by a graphic designer who took a sketch that Megan drew and brought it to life.

Do you have any plans to increase your product line?

Rob: We have received a lot of feedback from our wonderful customers on other products that they would like to see. So yes, we certainly have plans to add new products to our lineup. Creating Bath Buddy has been so much fun, and we look forward to repeating the process as often as we can with new products.

Before Bath Buddy, who was responsible for Gia and Napoleon's bath time?

Megan: I am always the one giving Gia and Napoleon a bath. Now, before we came up with Bath Buddy, getting them *to* the tub was a team effort. Rob and I both would have to trick them, corral them, carry them and do whatever it took to get them in the tub. But after that, bath time was all me.

Any encouragement for novice inventors?

Rob: You don't want to be that person who looks back on your life and thinks, “What if?” So if you have an idea, just go for it. Take that first step and get the ball rolling. Sketch it out, start making a rough prototype, anything you need to do to get the idea out of your head and into your hands! 🐾

Details: k9bathbuddy.com

5 MORE COOL INVENTIONS FOR DOGS

Dyson Groom Tool

Known for its top-of-the-line vacuum cleaners, this Dyson machine for medium- and long-haired dogs brushes and then removes loose hairs from your dog directly into the vacuum. The Groom Tool captures dead skin cells with every brush stroke. The 364 bristles are angled at 35 degrees, flexing to an upright position as you brush to penetrate your dog's coat and grab loose hairs.



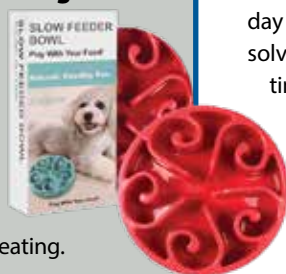
PetSafe Gentle Spray Bark Collar

One of the biggest challenges for responsible dog owners is controlling barking. This collar uses a microphone to pick up barking, triggering a harmless burst of spray to distract your dog and let you redirect its attention. The spray collar is safe for all dogs, including puppies.



Siensync Interactive Feeder Dog Bowl

The maze-like design of this feeder bowl is designed to prevent dogs from eating too fast—which can cause bloat, discomfort and other digestive problems. It adds interest to the meal without making it frustrating. Healthy, slow eating can also help prevent obesity, regurgitation and overeating.



Wigzi Tangle-Free Dual Dog Leash

If you have more than one dog, taking them for walks can often become a leash tanglefest. The retractable dual dog leash's design is such that neither leash can cross over the other, the problem that causes the tangle. Both the lead and brake buttons are color coded so you can know which dog you're controlling. The size is 50 lbs. per dog; length is 10 feet per dog.



Insect Shield Dog Insect Repellent Bandana

The bandanna is pretreated with permethrin, which is reputed to be one of the most effective tick repellents on the market. Ticks, fleas and other bugs can carry dangerous illnesses such as Lyme disease and heartworm. A blanket, bed, mat and other products are also available that provide the same kind of insect protection.



YOUTH AND PETS ARE SERVED

The best inventions for pets don't always originate with adults. To borrow from a saying by longtime TV and radio host Art Linkletter: Kids make the darndest things.

Their innovative skills were on dramatic display May 31-June 2 during the National Invention Convention and Entrepreneurship Expo, held at the Henry Ford Museum of American Innovation in Dearborn, Michigan. Among the inventions by students that were for pets, many involved detailed concepts, planning and schematics—some of which are briefly touched on below. Among the highlights, with students' comments:

The Illuminated Dogg—Edward Eisenman, Grade 5: "The Illuminated Dogg helps dog owners see their dogs at night if they are out on a walk, or even if they let their dogs out in the yard to use the bathroom. The invention is an illuminated dog coat that is powered by battery-powered LED lights. The LED lights ensure that the dog will not be harmed by the heat of the light, and the technology has a long battery life."

FRE-EZ Feeder—Arielle Levi, Grade 6: "The FRE-EZ Feeder is a seven-day automatic pet feeder that dispenses frozen pet food. My invention solves this problem by automatically feeding the pet at a scheduled time, once a day while the owner is gone."

Flashing Dog Bowl—Ethan Mott, Grade 2: "A weight-sensing water bowl to alert the owner that the pet requires more water."

Portable Pet Cooler—Mya Donnell, Grade 4: "My invention turns on two thermoelectric peltier cooling units on top of a portable animal kennel. While in a hot vehicle and turned on, it cools down the pet to a safe temperature, saving your pet from the effects of heat stroke or death."

Cattoman—Vanessa Wolf, Grade 6: "An ottoman stores a cat tower with a platform, scratching post, and cat toy. A place for cats to play in small homes with limited floor space."

The Cativity Center—Evelyn Krauss, Grade 4: "My invention, the Cativity Center, is a play mat for cats that would keep them from getting bored and running outside. According to American Humane, providing an indoor cat with a variety of interactive toys can keep them mentally and physically stimulated. It's a foldable, easy-to-store play mat with arches and interchangeable cat toys. The arches are wrapped in sisal twine to promote scratching and it has an optional heating pad."

K-9 Cuddle Coat—Abigail Johnson, Grade 6: "The K-9 Cuddle Coat is a coat with a customized microwaveable insert that fits inside a special compartment and keeps your dog warm once you microwave it. It is durable, thermally efficient, environmentally friendly, and safe for your dog. It's guaranteed to keep your dog nice and cozy in harsh, cold weather conditions."

For more on kids' inventions at the expo, see page 33.





Market Your Pet Invention

With Instagram Influencers

MAKE USE OF THE MILLIONS OF VIEWS ANIMALS GET

BY ELIZABETH BREEDLOVE

IF YOU'RE INTRODUCING a pet product and you want to be sure you're reaching pet owners and animal lovers, influencer marketing may be the way to go.

Social media platforms, especially Instagram, are overrun with famous pets. From Grumpy Cat (2.5 million followers) to Doug the Pug (3.4 million) to Jiffpom (8.8 million), active Instagram users often follow at least one celebrity animal. Imagine how many sales you could make if even one of these animals featured your invention in a post!

Pick the right partner

Begin your influencer marketing campaign by searching for influencers with whom you might be able to partner. There are multiple ways to go about this.

If you're on a tight budget, you can use a free tool such as FollowerWonk, HootSuite or even Google to search for the top pet Instagrammers. If you have a bigger budget, you may want to use influencer marketing software such as Intellifluence or IZEA to begin curating a list of potential celebrity pets who can help promote your invention.

As you curate your list of influencers, keep the following in mind:

- Look for influencers that fit your brand. For example, if your invention is for dog owners, Grumpy Cat may not be the best account for partnering. Beyond that, influencers should have similar values as your company, because you want to ensure your invention resonates with their audience.

- Don't focus on just the most famous pets or the most followed accounts. An engaged audience is more valuable than a large reach. Just because an account has millions of followers doesn't mean that is the right audience for your business. Additionally, you'll probably have an easier time working out the logistics of a partnership with a lesser-known influencer, as you won't be competing with so many other brands and products.
- On that note, look for dedicated audience engagement. If you see tens of thousands of followers but only getting 100-200 likes per picture, that's not a great engagement rate. Your ideal influencer will be someone with a large, engaged audience.

Working with influencers

Once you have a solid list of influencers you are interested in working with, you can begin to discuss potential partnerships and plan sponsored content. Suggestions:

- Above all, respect the influencers with whom you work. They've worked hard to build their brand, just like you. Don't expect free promotion, and don't ask them to sing your product's praises if they don't actually like it. Sponsored content and good influencer partnerships are built on mutual trust.
- On a similar note, give your influencers control over their content. Feel free to suggest content ideas or work with them to generate a great post, but keep in mind that it's their Instagram account, their brand, their story. It is up to them to decide

**\$69.5
BILLION**

The amount of pet industry spending by Americans in 2017, an all-time high, according to the American Pet Products Association.



INSTAGRAM'S MOST POPULAR PET ACCOUNTS

Instagram users love to follow animal accounts: dogs, cats, foxes, hedgehogs, raccoons, pigs and everything in between. The top 5 followed pet accounts on Instagram (as of the end of 2017):

1. **Jiffpom (@jiffpom)**
Pomeranian, 8.8M followers
2. **Nala (@nala_cat)**
cat, 3.6M followers
3. **Doug the Pug (@itsdougthepug)**
Pug, 3.4M followers
4. **Maru Taro (@marutaro)**
Shiba Inu, 2.6M followers
5. **Grumpy Cat (@realgrumpycat)**
cat, 2.5M followers

An engaged audience is more valuable than a large reach. Just because an account has millions of followers doesn't mean that is the right audience for your business.

how they want to share content. This is good news for you, too; they likely know their audience very well, meaning they know how to create content that will resonate with them, giving you the boost you desire.

- Always begin an influencer campaign with actionable goals. Just like any marketing campaign, it's important to know what you are hoping to accomplish by working with influencers so that everything you do can help you reach that goal. Keep these goals in mind as you work with influencers to create content.
- Consider sponsoring a contest or giveaway, as nearly every Instagram user can appreciate a chance to win a fun product. Ask your influencers whether they would be willing to post about your product with a contest where followers can like the photo and tag a friend in the caption, and one will be selected to win. If you'd like to partner with more than one brand or influencer, you can consider sponsoring a loop giveaway—a contest in which multiple accounts join together and require those who enter to follow all of the sponsoring accounts' Instagram profiles. Contests and giveaways will benefit you and the influencer, so if

you have product to give away this can be a highly effective influencer marketing tactic.

- Offer special discount codes or offers to influencers who are partners. Providing promo codes to your influencers has benefits for everyone involved. If an influencer posts about your brand with a discount code, not only will you almost certainly sell product to his or her followers, you'll be able to measure each influencer's individual return on investment so that you can determine which influencers get the best results for you. The influencer will benefit, too; his or her followers will engage with their posts, hoping to continue receiving discounts for the products and brands that interest them most. It's a win-win-win for everyone: you, the influencer and the followers. 📦

Elizabeth Breedlove is content marketing manager at Enventys 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.





PART 1 OF 2

13 Strangers Ride Their Imaginations

MY STARTUPBUS EXPERIENCE WAS A CRASH COURSE
IN INNOVATION AND ENTREPRENEURSHIP **BY JEREMY LOSAW**

IN 1992, this soon-to-be iconic intro was uttered for the first time on the groundbreaking reality show “The Real World”: “This is the true story of seven strangers picked to live in a house, work together, and have their lives taped. Find out what happens when people stop being polite, and start getting real...”

I heard this countless times as a teenager. Sixteen years later, those words bubbled to the top of my brain as I set foot on a dull teal coach bus on a muggy spring morning in Tampa to start my epic journey to compete in the hack-a-thon road trip called StartupBus.

Like that first cast of “The Real World,” I didn’t really know what I was getting into. Five days later, I was a founder of a start-up company called Sak Labs with our product—the Dad Sak, the world’s first fully integrated infant carrier and backpack. I wrote and filed my own provisional patent application, formed some amazing friendships, shook my booty on Bourbon Street at 2 a.m. on a Monday (shhh..don’t tell), and ultimately won second place in the start-up competition.

This is the true story (Part 1) of 13 strangers picked to ride a bus from Tampa to New Orleans, build companies, launch products, and have their pitches recorded. This is what happens when people dream big, drink an awful lot of Red Bull, and get down to business.

All about the challenge

I heard about StartupBus a few months before the journey. I am a faithful listener to the StartUp podcast from Gimlet Media, and between Seasons 6 and 7 host Eric Mennel ran a five-part miniseries about the 2017 competition. Mennel rode the bus from New York as it made its way to New Orleans. Ten minutes into the first episode I was obsessed, and I knew this was an experience I had to have. Travel + competition = sign me up.

By the time I finished listening to the podcast about StartupBus, I knew the basic premise. Contestants, (primarily developers, designers and business specialists) board nine buses in different cities all over the country and one from Mexico. Over the course of three days, they form teams and start companies while the bus bounces down the highway. By the time they reach the final destination in New Orleans, each company needs to have a fully launched product and a refined pitch for the three-round pitch competition. The winner is the team with the best product and pitch. The prize? Absolutely nothing.

As there was no bus from my home state of North Carolina, I chose to apply for the Florida bus departing from Tampa. I went through the three-step application process and won a golden ticket to be on the bus about a week after I started the application.

Shortly after, I spoke to the conductor of the Florida bus, Robert Blacklidge, a Buspreneur (as

The North American route map reflects an ambitious project in which contestants board nine buses in different U.S. cities and one from Mexico.



In three days, teams must start a company, fully launch a product and craft a refined pitch for the three-round pitch competition.

alumni of the experience are forever called) from the Florida bus the year before. He started a company on the bus called Course Align, which helps universities match their curriculum to the needs of the marketplace. He mentioned that doing physical products on StartupBus is not common, because developing something tangible is so difficult in that environment and timeframe. Most teams develop apps or other digital products and services. This only served to whet my appetite for pitching a physical product.

No turning back

Truth be told, the week before the competition my enthusiasm for the experience was waning. The reality of being away from my family for so many days started to creep in, and it was a bit of a puzzle to pull together travel plans to get to Florida and back from New Orleans. Like the infamous Groucho Marx quote, I was about to send a note that read “Please accept my resignation. I don’t want to belong to any club that will accept me as a member.”

I was also wracking my brain trying to come up with a good product to build on the bus. Days before departure, an email mentioned that the first thing we were going to do was pitch an idea. I really wanted to build an IoT device, so I sketched out a novel idea for an IoT faucet that I dubbed Skoga after a waterfall in Iceland. I bought a bunch of sensors and IoT development boards from Adafruit, packed up four

boxes of electronics supplies, solder, wires, breadboards and numerous electronic gadgets. Then on April 26, I headed to the airport fully expecting my box of gadgets to land me on the “no-fly” list.

The night before the bus departed, the Florida Buspreneur and alumni held a meet-and-greet at a bar along the waterfront. This was my first chance to meet the other riders and see who else may be interested in working on a physical product. After a beer or two, the conversation was free flowing and my excitement for the journey was re-ignited. The cheapskate that I am, I did not book a hotel room that night; fortunately, my future teammate Walter Matthews offered me his couch for crashing. I fell asleep that night watching a playoff hockey game where the Vegas Golden Knights, in their inaugural season, destroyed the San Jose Sharks. I smiled and thought this was a good sign that new teams can have a big impact.

The next morning, our chariot was waiting at the convention center parking lot. The riders sleepily gathered around the coach, loaded their luggage in the belly of the bus and set off west toward Orlando. The bus driver read us the rules, one of them stated with particular gruffness: “No open-top beverage containers.” (He also owns the bus and had a keen interest in keeping it clean.)

As we made miles through the Florida lowlands, Buspreneur Robert gave us an enthusiastic welcome. Then it was time to pitch.

StartupBus Florida contestants, 2018 (from left): Conductors Robert Blacklidge and Chris McElveen, Lance Robinson, Kyle Sasser, Tatyanna Cobb, Walter Matthews, Jah’Tia Haynes, Adam Cummings, Geovanni Suplee, Richard Kim, Vanel Marc, Kim Mohr, Jeremy Losaw, bus driver, and Prateek Gupta (conductor).



Idea takes a quick turn

One by one, riders went to the front of the bus, took the mic, introduced themselves and pitched their product idea. There was Rich from Seattle, who had an idea for a political app; Jah'Tia, an event manager with an idea for an entrepreneur ecosystem; Lance, the software developer from Atlanta, with an idea for a daycare web service; Kyle, the real estate pro and podcaster with an idea for the “tinder for golf”; and the memorable retired gluten-free cafe owner Kim, who had an idea for a line of healthy snacks and encouraged us to “Keep it Simple, Sexy.” This was a motley crew with some great characters, and I knew we were set for a memorable ride.

Around noon on that first morning, we stopped at Full Sail University to pick up a couple of more riders and on-board some cases of Red Bull (aka “open-top containers”). Then it was time to get down to forming teams.

All of the riders piled into the middle of the bus and began discussing which ideas to pursue. It was all very polite discussion, but in a way it was like watching a group of penguins on an iceberg waiting for the first one to jump so the rest can follow. Eventually, Walter and I decided to pursue my faucet idea and pulled in a Marine veteran named Vanel; software developer Lance; and Geovanni, the podcaster and self-proclaimed “Minority Prince.”

As we brainstormed ideas of what the product should be, Lance found a similar concept on Amazon and pitched our group an idea for an infant carrier that would zip into a backpack. Like a Kubrick-esque jump-cut, we pivoted hard and jumped headlong into working on the infant carrier. The product was immediately dubbed the “Dad Sak”; by 2:30 p.m. we had registered the domain and were off and running.

Elsewhere on the bus, two other teams formed. A foursome came up with “Buddy Bunker,” an app to pair solo golfers together for a round of golf. The remaining team of four created “Polititrust,” with a goal of building a system to bring transparency to the masses about politicians’ stances and records.

Somewhere near the front of the bus, the first partially finished Red Bull was spilled, the tributaries of energy oozing into disparate corners of the bus. The driver fumed over the mic to a sea of deaf ears, and we got to work. ☑



Top: Jeremy Losaw takes the mic for the first pitch of the Dad Sak. Others (from left) are Vanel Marc, Lance Robinson, Prateek Gupta and Walter Matthews (facing front).

Middle: Dad Sak team members (from left) included Marc, Geovanni Suplee, Matthews, Robinson and Losaw.

Bottom: Robinson demonstrates the product during the final round.



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Scouting, Inventing Have a Long History

INVENTORS DIGEST A LISTED RESOURCE
IN PURSUIT OF A MERIT BADGE BY JOHN G. RAU

WHEN YOU THINK of inventors, think of the U.S. Scouting program.

The Boy Scouts of America have been around since 1910. The stated mission for the group that accepts 11- to 17-year-olds is to “foster moral strength, promote citizenship, and help children grow up physically and morally healthy.”

Originally, only 57 merit badges were available. One was the Invention merit badge, which had the requirement that Scouts had to “invent and patent some useful article.”

The badge was discontinued in 1915 after only 10 boys had earned it, but it was reinstated 100 years after the organization's founding. In June 2010, the Boy Scouts of America and the Lemelson-MIT Program announced a partnership to introduce the new version of the Invention merit badge, designed to encourage Scouts to be inventive and solve real-world problems. This badge is one of the 137 Boy Scout merit badges offered by the BSA.

Getting the Invention badge

The requirements for obtaining the Invention merit badge, as outlined in the BSA Merit Badge Series, list a series of steps very similar to those described and suggested in the many “how-to invent articles” that have appeared over the years in articles in *Inventors Digest*—an identified periodical resource to be consulted in the merit badge pursuit. A brief overview and paraphrasing of the merit badge requirements is as follows. Readers of this magazine will readily recognize that the suggested steps to be followed by a Scout in achieving this badge parallels those suggested by many experts in the field:

- **Step 1:** Research the topic of “inventing” and the role of inventors and inventions in economic development.
- **Step 2:** Talk to and/or read about other inventors who may have invented a useful item. Tell your counselor what you learned.
- **Step 3:** Do each of the following:
 - (3a) Define the term “intellectual property (IP).”

Explain which government agencies oversee the protection of IP, the types of IP that can be protected, how such property is protected, and why protection is necessary.

(3b) Explain the components of a patent and the different types of patents available.

(3c) Examine your Scouting gear and find a patent number on a camping item you have used. With your parents' permission, use the internet to find out more about the patent. Compare the finished item with the claims and patent drawings. Report what you have learned to your counselor.

(3d) Explain to your counselor the term “patent infringement.”

- **Step 4:** Discuss with your counselor the types of inventions that are appropriate to share with others and explain why. Tell your counselor about one unpatented invention and its impact on society.
- **Step 5:** Choose a commercially available product that you have used on an overnight camping trip. Make recommendations for improving the product and make a sketch that shows your recommendations. Discuss your recommendations with your counselor.
- **Step 6:** Think of an item you would like to invent that would solve a problem for your family, troop, chartered organization, community, or a special-interest group. Then do each of the following, while keeping a notebook to record your progress:
 - (6a) Talk to potential users of your invention and determine their needs. Then, based on what you have learned, write a statement describing the invention and how it would help solve a problem. This statement should include a detailed sketch of the invention.
 - (6b) Create a model of the invention using clay, cardboard, or any other readily available material. List the materials necessary to build a prototype of the invention.
 - (6c) Share the idea and the model with your counselor and potential users of your invention. Record their feedback in your notebook.

- **Step 7:** Build a working prototype of the item you invented. Test and evaluate the invention. Evaluation considerations should include cost, usefulness, marketability, appearance, and function. Describe how your original vision and expectations for your invention are similar or dissimilar to the prototype you built. Have your counselor evaluate and critique your prototype.
- **Step 8:** Do one of the following:
 (8a) Participate with a club or team (robotics team, science club, engineering club, etc.) that builds a useful item. Share your experience with your counselor.
 (8b) Visit a museum or exhibit dedicated to an inventor or invention, and create a presentation of your visit to share with a group such as your troop.
- **Step 9:** Discuss with your counselor the diverse skills, education, training, and experience it takes to be an inventor. Discuss how you can prepare yourself to be creative and inventive to

solve problems at home, in school and in your community. Discuss three career fields that might utilize the skills of an inventor.

BSA and the Band-Aid

These steps are a good summary of what one should do to be prepared as an inventor—and the Boy Scouts' motto is, "Be prepared."

Did you know that the Boy Scouts played a major role in the success of an iconic product, the Band-Aid? Here's the story.

The Band-Aid was invented in 1921 by Johnson & Johnson employee Earle Dickson, who devised a solution to an everyday problem at home when his wife had a habit of cutting her fingers in the kitchen while preparing food. His solution was to take a piece of gauze and attach it to the center of a piece of tape, then cover the product with crinoline to keep it sterile. This ready-to-go product allowed his wife to dress her wounds without assistance.

The Boy Scouts of America and the Lemelson-MIT Program announced a partnership in 2010 to introduce the new version of the Invention merit badge, designed to encourage Scouts to be inventive and solve real-world problems.



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When Dickson's boss, James Johnson, saw the invention, he decided to manufacture and sell it to the public. The Band-Aid was born. It was a great idea, and there was nothing else on the market like it.

However, the Band-Aid faltered early, with first-year sales of just \$3,000. Johnson & Johnson refused to give up on the product, so it adjusted its sales strategy. The company gave it away free to Boy Scout troops for their medical kits and to butchers, both for a limited time. The Band-Aids were included in the custom first-aid kits that Johnson & Johnson produced for the BSA. The kits were designed to help Boy Scouts earn their merit badges for first aid.

By 1932, the company was also producing first-aid kits with Band-Aids enclosed so that Girl Scouts could likewise earn their merit badges in first aid. This marketing strategy paid off. Scouts and butchers soon were using Band-Aids, and so were their families. Word spread; Band-Aid sales skyrocketed. So the Scouts played a major role in getting this new invention successfully into the marketplace.

Upcoming changes

The Girl Scouts of America offer to Brownies an Inventor badge as one of its skill-building badges. Other skill-building badges available to Girl Scouts include: Money Manager, Philanthropist, Business Owner, Business Plan and Entrepreneur.

On May 2 this year, the Boy Scouts of America announced it will drop the "boy" from its name-sake program next February. The program's new name will be Scouts BSA (the organization's name will stay the same). The organization also said it will start welcoming older girls to help them earn the organization's highest rank of Eagle Scout.

The two organizations will still be separate entities, but this might stimulate joint invention development activities between them. So, think of the Scouts—both boys and girls—as a good source of potential future inventors. 📧

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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YOUNG IDEAS

The future of innovation is very bright, if a recent showcase for youth inventing is any indication.

More than 400 young inventors and entrepreneurs displayed their creations during the National Invention Convention and Entrepreneurship Expo at the Henry Ford Museum of American Innovation in Dearborn, Michigan from May 31 to June 2. More than 108,000 K-12 student innovators from 20 states, Mexico and Canada took part in local competitions earlier this year; 427 advanced to the nationals in Dearborn.

Longtime *Inventors Digest* contributor Edith G. Tolchin captured the energy and creativity through these photos she took at the event. Edie, also the author of the recent book "Fanny on Fire," served as a judge along with her daughter, Dori G. Lewandowski.

The competition was the marquee event of the STEMIE Coalition. It was presented by United Technologies Corporation.



Edith G. Tolchin (far left) poses with her judging circle. The competition featured 427 young inventors.



Akshita Jindal, a freshman at Suffield (Connecticut) High School, was inspired by her hospitalized uncle to invent her health monitoring system. Her device uses a pulse sensor wrapped around the patient's finger to transmit data including pulse rate and temperature in six different environments.



Brother-and-sister team Joe and Heidi Hudicka show their educational board game "OUTTA THIS WORLD!", which teaches an accelerated invention process.



Help is on the Way!

ANDREI IANCU TOLD ME PERSONALLY,
AND OTHER SIGNS SAY SO AS WELL **BY LOUIS CARBONNEAU**

THOSE WORDS in the main headline were affirmed by new United States Patent and Trademark Office Director Andrei Iancu when I spoke to him at the recent American Intellectual Property Law Association spring meeting in Seattle. I'll come back to this in a minute.

By now, however, anyone who follows the IP world (even distantly) knows that on April 24, the U.S. Supreme Court issued its long-awaited decision in *Oil States Energy Services, LLC v. Greene's Energy Group* and came down 7-2 (with a strong dissent from Chief Justice John Roberts and newly appointed Justice Neil Gorsuch) in favor of maintaining the Patent Trial and Appeal Board, warts and all.

Justice Thomas, not particularly known for his IP chops, wrote the majority decision. The court was careful to point out that its decision should be construed narrowly and should not prevent arguing that the invalidation of patents by the PTAB may constitute a "taking" of a property right under the U.S. Constitution, or that it violates due process. Nevertheless, with the stroke of a pen, SCOTUS reversed a century-old precedent by declaring that a patent is, in its very essence, a "public franchise" (whatever that means) rather than private property.

SAS impact is murky

This statement is certainly not what patent owners wanted to hear, because it makes it clear that the government can take away what it granted in the first place. It also may further muddy the waters as to what a patent really is. Some pundits have read in the decision a not-too-subtle invitation to re-argue the issue more squarely on the constitutional aspect, and this is precisely what happened on May 9 when an inventor whose patent had been invalidated by the PTAB filed a class action against the USPTO and the PTAB. So, here we go again!

However, on the same day it issued the *Oil States* decision, the Supreme Court also decided another patent case, *SAS Institute Inc. v. Iancu*, in which it concluded by a 5-4 margin that the PTAB must address and decide on ALL patent claims that an inter partes review petitioner raises as being invalid. Until now, it would only address a subset of claims that it wanted to discuss, leaving a lot unresolved.

Opinions vary a bit as to what this means in practice, but the consensus seems to be that this will favor patent owners by forcing petitioners to do their homework on all claims they intend to challenge—knowing that an adverse decision will provide the patentee with a stronger estoppel protection in a subsequent court case.

On the other hand, it gives the PTAB even more discretion, and could make PTAB decisions even harder to challenge down the road. This wouldn't be such a bad thing if the PTAB had a reputation as a neutral and competent tribunal. Sadly, that is not the case.

'Yes, you can'

Which bring us back to my discussion with Director Iancu. On behalf of all inventors and patent owners, I told him in no uncertain terms that I talk to you day in and day out and hear your deep frustration and anger about your valuable inventions being copied with impunity by more established players. I told him that you have lost faith in the U.S. patent system's ability to protect your investment and innovations.

"Can I tell our readers that help is on the way?" I asked him. His response was a clear "Yes, you can"—and so far, he seems to mean it.

We have already seen several initiatives launched since Iancu took office on February 5, such as new guidelines regarding patent subject matter eligibility,



Recent initiatives are building a stronger patent environment that could provide opportunities for buyers and sellers in coming months.

as well as a May 9 proposal (currently open to public comments) to finally reconcile the PTAB standard for determining validity with the one used by the courts—something the Supreme Court had the opportunity to fix last year in *Cuozzo Speed Technologies, LLC v. Lee* but refused to do.

Other highlights about my conversation with Director Iancu are that he seems to believe the patent troll narrative is pretty much a thing of the past and that there is growing bipartisan support behind passing some version of the STRONGER Patents Act in Congress, filed in March. It is also clear from his public remarks that the PTAB is up for an in-depth review of its practices and, shall we say, agenda.

IPR rates falling

What is the net effect of all this?

Time for a prediction: I believe that the inter partes review institution rate at the PTAB will continue to fall gradually (it has already gone from 80 percent to slightly above 60 percent, according to the latest USPTO statistics).

More important, having been on the other side of the fence during my 15 years in the patent group at Microsoft, I know how large corporations approach these matters. I strongly believe that once the invalidation rates fall below 50 percent—which should occur in the next year—we will have reached a tipping point where lawyers will have to start telling their management that filing an IPR is no longer the slam dunk it used to be and that it could damage their chances in court if the PTAB refuses to institute a petition, let alone decides to uphold the validity of the claims being challenged.

If you add to this the reasonable expectation that the impact of the landmark 2014 *Alice Corp. v. CLS Bank International* ruling (widely seen as a blow to patent eligibility) might also decrease rapidly if recent case law making this an issue at trial continues to hold, we may soon live in a different environment than the one we have seen in the past five years—which is none too soon!

So if you are looking to acquire patents, you should hurry, as we have already seen a lot more



interest lately from buyers who are trying to close deals while valuations are still relatively low. If you are looking to sell, this is a good time to start engaging as the next months should offer gradually more favorable market conditions.

Buyers and sellers

Undoubtedly, the biggest recent news in this category was **HGGC's** proposed acquisition of **RPX** for roughly half a billion dollars. Many RPX shareholders are not happy with this valuation and have sued or threatened to sue the company. ...

Altaba Inc. (formerly Yahoo Inc.) has had to reduce the valuation of its Excalibur Portfolio for the third time this year, dropping the price from \$675 million to \$640 million. The decision to reduce the portfolio's valuation comes as a surprise following the company's addition of Thomas McInerney as the new president last year. He firmly held his strategy to become more aggressive toward IP infringement. ...

Marathon Patent Group assigned a number of patents to **Fortress Investments Group**. **Unwired Planet International** and **Samsung** also made transfers. Unwired Planet made headlines last year with a significant decision providing guidance on fair, reasonable and non-discriminatory (FRAND) royalty rates for patents (*Unwired Planet v. Huawei Technologies*).

Winners and losers

A divided SCOTUS was called to determine whether a company's loss of profits can be obtained as a result of patent infringement that occurred overseas. The dispute involved two oilfield service industry giants, **Schlumberger** and **ION Geophysical Corp.** The bench ultimately reversed the appellate court's decision to bar Schlumberger from recovering \$93.4 million in lost profits. ...

Additionally, a judge rejected a jury's verdict that awarded more than \$200 million in damages to **Merck**. The decision was based on the equitable defense of "unclean hands." The judge invoked Merck's misconduct both in its business practices and during litigation. Ouch. ...

Also noteworthy, a ruling from a federal district court punctuated the paramount importance of meticulously drafting your patents in a decision affecting **Droplets** and **E*Trade Bank**. Due to the incompleteness of its priority claim dating to 1999, Droplets' patent claims were ultimately invalidated over its own PCT. (A PCT, named after the Patent Cooperation Treaty, provides a unified procedure for filing patent applications to protect inventions in each of its contracting states.) This provides a teachable moment: In today's volatile market, every detail counts.

I'll see you in court

Following a lengthy collaboration, **Microsoft** is being sued by video developer **Infernal Technologies** for game engine patent infringement while developing popular video games such as Halo 5 and Gears of War.

Around the world

In Europe, the **U.K.** has ratified the United Patent Court Agreement, which will enable the International Court's jurisdiction over all patent disputes involving participating states. Thirteen states must ratify the treaty for the court to become a reality. ... In **Asia**, China's Office of Intellectual Property is working to establish high punitive damages in an effort to deter infringement practices. ... Closer to home, **Canada's** new IP strategy will focus on educating Canadian entrepreneurs in hopes that this legislative initiative will cultivate innovation growth in the country. 📌



HANDSHAKES

A couple notable transactions include Tel-Aviv-based **Corephotonics**, a pioneer in dual camera technologies, which shook hands on a significant licensing deal with **Oppe**, the Japanese smartphone's manufacturer. In the United States, Corephotonics is embroiled in a legal battle with Apple over dual-lens cameras utilized on several iPhone versions.

Similarly, **TiVo** entered into a second crucial licensing agreement with Australia-based company Telstra. TiVo's increased efforts in research and development in 2017 re paying off.

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.





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It May Be an Improvement, but **Will it Sell?**

UNIQUENESS IS NOT ENOUGH FOR YOUR INVENTION
TO BE A SUCCESS **BY GENE QUINN**

FREQUENTLY, one of the most challenging aspects of inventing is determining which need a particular invention fills. This is not to suggest that inventors do not know what their invention does, why they created the invention, or how it might be used by a potential consumer. Instead, one of the biggest issues I see is inventors not having a good grasp of why an invention might be desirable from the viewpoint of consumers who might be perfectly willing to use various substitutes.

I can't begin to count the number of times I've heard inventors say that there is nothing available on the market that is at all like what they have created. Invariably, the stronger and more absolute the statement, the more likely what has been created is not that different from things that are widely available. That does not always mean that the invention is not worth pursuing, but specific consideration must be given to whether a consumer will be willing to pay money to purchase the invention.

Get serious, Issac

For example, let's say Issac Inventor invented a new and improved shovel. What makes the shovel unique is that it includes an integrated radio, which allows the user to listen to music, talk radio or sports as he or she digs away.

The first question Issac should ask himself is how many people might be willing to buy such a shovel—because if the number of people who might be willing to purchase a shovel with integrated radio is too small, Issac should move on to his next invention. Determining the size of the market goes beyond the scope of this article, so let's focus on the issue of substitutes.

I've had many inventors like Issac come to me for assistance, and all too frequently they will believe that they will corner the market on shovels because who would ever want to buy an ordinary shovel when you could purchase a shovel with an integrated radio? To that, I always point out that there are always going to be a subset of people who will stick with cheaper,

inferior solutions that they deem to be perfectly workable substitutes for spending the money necessary to acquire the latest gadget or technology.

In this case, even if someone is very interested in listening to music while he or she works, the person could simply use an ordinary shovel and then have a radio along with them or perhaps listen on a smart-phone with a headset.

No one would ever do that, Issac protests! Yes, Issac, plenty of people are going to do exactly that.

Recently, a friend of mine who knew I was in the market for a new laptop sent me a link to a fantastic deal on late 2016 Apple laptops. He is an Apple expert, and he said these are the best deals he has ever seen on machines like this. The laptops had 2TB of storage and were completely decked out with every bell and whistle you can imagine.

If I bought it, the laptop would be better than my desktop computer. Although I do need a newer laptop, I don't need something that extravagant. And I've personally decided that with all of the business travel I do, I don't want to have a laptop that is my everyday machine—even though I could hook up monitors to it when I'm at my desk. Of course I don't plan on dropping and breaking my laptop, but frequent business travel is hard on the body and even harder on electronics.

So even though a computer is my primary tool, I've decided against this fantastic deal because it is more than I need and I feel it would be wasteful spending.

The economic equation

If they are honest, inventors will have stories of their own just like my laptop story. Practically everyone does, unless he or she had the great fortune to be born with a nine-figure trust fund. This doesn't mean that the laptop my friend told me about isn't fantastic, and it isn't to suggest that Issac's shovel with integrated radio isn't equally fantastic. But at some point it is essential to consider whether enough people will both want what you have invented and view it as economical enough in light of other available solutions.



Given the expenses of filing a provisional patent application, patent maintenance and attorney fees, the inventor must believe consumers will be willing to pay a premium for his or her invention over and above other available solutions.

Financial considerations are critically important for inventors. Obviously, the goal of inventing is to make money, so it has to be economically feasible. More important, however, inventors must remember that the economic feasibility equation must factor in all of the time and effort spent during the innovation process, as well as all the money invested.

For example, most inventors are going to file a patent application, or at least a provisional patent application. Filing a provisional patent application is going to cost a certain amount of money even if you choose to create and file the application yourself. Likewise, if you ultimately obtain a patent, there will be government fees along the way that must be paid, and attorney fees if you choose not to pursue the goal of obtaining a patent solo. That money creates a cost invested into the project that must be returned before any profits are realized. This means that in order for an invention to be a sensible endeavor, the inventor must have some reasonable basis to believe consumers will be willing to pay a premium for the invention over and above other available solutions.

With this in mind, I always encourage inventors to consider whether what they have come up with is an improvement significant enough to warrant someone who has the prior art unit to think that he or she really needs to invest in that improvement.

So using the example above, if you own a shovel already, is Issac's shovel with integrated radio enough of an improvement to have you race out to buy it? Obviously not everyone who owns a shovel would need to buy it to make the invention worth pursuing, but shovel owners already form the market, so you would want at least a meaningful portion of that already existing market to be intrigued enough by the advance to say yes, I need that improved version.

If Issac is honest with himself, his invention of a shovel with integrated radio might not be enough of an improvement over an ordinary shovel and separate radio to warrant moving forward.

But what if Irene Inventor invented a fully automated shovel? Rather than engaging in back-breaking digging, you just lay the unit on the ground and it automatically digs the hole. If that actually worked, Irene's invention might be something quite interesting—with or without the integrated radio. ☛

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.





Another Facebook Issue: Counterfeit Goods

OVERALL IMPACT OF KNOCK-OFFS IS IN THE HUNDREDS OF BILLIONS OF DOLLARS **BY GENE QUINN**

SOCIAL MEDIA platforms such as Facebook, Instagram and others are growing in importance for counterfeiters, with statistical evidence of dramatic increases in the practice during the past several years.

Counterfeit products are an enormous problem for inventors and businesses throughout the world. Counterfeiters rip off name-brand products and make cheap knock-offs, easily (and conservatively) costing many hundreds of billions of dollars each year. According to the Global Innovation Policy Center of the United States Chamber of Commerce, global physical counterfeiting amounts to \$461,000,000,000 a year in imported fake goods.

“Counterfeiting today represents a tremendous and ever-increasing global threat,” reads a 2016 report of the GIPC titled “Measuring the Magnitude of Global Counterfeiting.” “Counterfeit products—from goods and merchandise, tobacco products, and industrial parts to banknotes and medicines—circulate across the globe. These products cause real damage to consumers, industries, and economies.”

This is a far bigger story than losses to big companies and the associated loss of downstream economic activity—although those losses to jobs, loss of revenue and taxation, and inferior consumer products are all very real. Those who support counterfeiters by buying knock-off goods are also increasingly supporting organized crime, including drug cartels and terrorists, who are increasingly looking to the generous profits that can be earned and exceptionally low jail terms even if they do get caught.

“Interpol and Federal Bureau of Investigation seizure records suggest that millions of U.S. dollars in proceeds from counterfeit goods (e.g., brake pads and cigarettes) have been destined for terrorist organizations, such as Hezbollah and Al-Qaeda,” the 2016 GIPC report reads.

Alarming figures

When we talk about the growing problems of counterfeits online, it is typical to look at the major e-commerce players. But e-commerce sites have improved their policing systems. So counterfeiters have found it necessary to diversify and use other means while maintaining their existing activities on e-commerce sites.

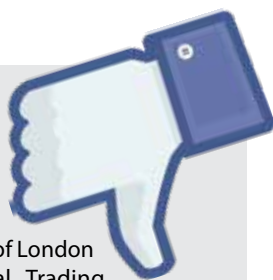
For brand owners, the monitoring that is necessary is akin to playing a real-life game of whack-a-mole. That is becoming more difficult as counterfeiters increasingly look to sources including social media platforms that were considered unsuspicious not very long ago. But today, Facebook, Instagram and other social media channels are often matched with hidden web chats such as WhatsApp or Telegram in order to peddle counterfeit products.

For example, according to RedPoints, an online piracy and brand abuse monitoring company, in 2015 Facebook accounted for only 2.2 percent of counterfeit sales of football jerseys for the clubs being monitored. That number grew to 46.3 percent by 2017.

“Fueled by the proliferation of internet use and social media platforms, the magnitude of global physical counterfeiting is estimated to have increased considerably since the beginning of this century,” according to the GIPC report. 📌



Not Just a U.S. Problem



Last December, *The Daily Telegraph* of London reported that the U.K.'s National Trading Standards was critical of Facebook's failure to stop counterfeit designer goods being sold online. According to the Telegraph, an undercover investigation by BBC South East discovered that even after investigators had received fake goods ordered through the forum and reported it to Facebook, the sellers were still continuing to operate.

Mike Andrews, lead coordinator of the National Trading Standards eCrime Team, told the BBC: "In our opinion, we don't think Facebook does enough to remove the infringing goods that we see on their platform."

"It's quite easy to go on there now and buy any sort of counterfeit product you would like, and when we've approached Facebook to try and get this content removed they simply don't act quickly enough, if at all, in many cases."

Per the Telegraph, the investigation found that some counterfeiters offered home delivery. One counterfeit trader told reporters that he "could get away with it for about six months" before Facebook closed him down, and "then you start again."

Facebook—already plagued with a growing number of fake accounts—said it has launched an investigation into the sellers.

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Is SCOTUS Intentionally Destroying the Patent System?

BOTTOM LINE: THE SUPREME COURT
IS TOO UNINFORMED TO DO SO **BY GENE QUINN**

FOLLOWING A DECADE of dubious decisions that continually erode patent rights and limit what is patent eligible, some may wonder whether the U.S. Supreme Court is intentionally ruining the country's patent system.

Although it is accurate to characterize this court as anti-patent on the whole, it is something else to characterize the Supreme Court as a knowing and intentional actor. That would require a level of understanding and appreciation it does not possess.

SCOTUS is no more an intentional actor than a 3-year-old. Whether the result of hubris, complete indifference or lack of aptitude, this Supreme Court is uninformed when it comes to patents, technology and the impact both play on the broader U.S. economy.

A sorry 12 years

Yes, the Supreme Court has been overwhelmingly responsible for hurting the U.S. patent system in the past 12 years, starting at least since making it difficult—if not impossible—for victorious patent owners to obtain a permanent injunction against infringers in *eBay v. MerchExchange* in 2006.

What good is an exclusive right without the right to exclude? The Supreme Court didn't answer that then and hasn't seen fit to answer that simple question since. But isn't that typical with those with only first-level understanding of a subject? When confronted with facts that expose their positions or

uninformed opinions for what they really are, they simply retreat, ignore and feign moral injury.

The Supreme Court, with the exception of Justice Neil Gorsuch, lacks all knowledge and understanding of patents and technology, and there is no reason to believe they can be reasoned with. Yes, Chief Justice John Roberts joined Justice Gorsuch in dissent in the recent *Oil States* verdict that upheld the oft-criticized practice of inter partes review, but where has he been in all of the other patent cases decided since he has been on the court?

Overruling prior precedent

During the last several years, this Supreme Court has overruled previous SCOTUS panels on matters of patent eligibility that had been so well established that it was viewed as heretical to even question them. At one time, everything made by humans under the sun was considered patent eligible. That is what the legislative history of the 1952 Patent Act says, and what every court, including the Supreme Court, had quoted since it was written.

The law as the result of *Diamond v. Chakrabarty* in 1980 was that the touchstone of patent eligibility was human intervention and action, which was simply ignored in 2013's *AMP v. Myriad Genetics*. In 1981's *Diamond v. Diehr*, the Supreme Court told inferior courts not to conflate novelty and obviousness with patent eligibility, and yet that is exactly

PHOTOGRAPH BY FRANZ JANTZEN, COLLECTION OF THE SUPREME COURT OF THE UNITED STATES

What good is an exclusive right without the right to exclude? The Supreme Court didn't answer that in 2006 and hasn't seen fit to answer that simple question since.

what this Supreme Court did in *Mayo v. Prometheus* (2012) and *Alice v. CLS Bank* (2014).

The hubris of this Supreme Court is without bounds, throwing settled patent eligibility law dating back generations into uncertainty, overruling their own prior precedent, and deeply injuring American technological competitiveness.

Tucked far away from reality, the Supreme Court acts as if it knows everything about everything. In a world becoming more complex and specialized by the day, it is utter fantasy to believe that a homogenous group of senior citizens from Ivy League schools who have no scientific training possesses the breadth and depth of knowledge to wisely pontificate on any and every subject—particularly those relating to cutting-edge technology.

Poison to start-ups

It is because of the Supreme Court that high-tech start-ups are unable to obtain patent protection necessary to attract investors. It is because of the Supreme Court that entities such as the Cleveland Clinic have abandoned entire fields of endeavor, including medical diagnostics. It is because of the Supreme Court that investors interested in artificial intelligence are taking their money to China and funding start-ups there, where both software and business methods are patent eligible.

Investors aren't interested in many U.S. high-tech start-ups because they know many patents in the software, biotech and medical arenas are extremely difficult to obtain, and even if obtained will be impossible to keep thanks to the curtailing of what is patent eligible by the Supreme Court.

Congress needs to save us from the Supreme Court, which is incapable of forming patent policy and shouldn't be doing that in the first place. If Supreme Court members want to be legislators, let them resign and run for Congress. Meanwhile, it is time for those actually elected to Congress to exercise their constitutional duties and take control of America's patent policy. ☐



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Doing Right by the Wright Brothers

USPTO DIRECTOR'S COMMENTS HELP CRASH THE PATENT-TROLL NARRATIVE **BY GENE QUINN**



A FEW MONTHS AGO at an event hosted by the Global Intellectual Property Center of the U.S. Chamber of Commerce in Washington, D.C., Andrei Iancu delivered his first major policy speech as director of the United States Patent and Trademark Office. He said emphatically—and believably—that in order for the Trump Administration to deliver on the mission to create sustained economic growth, the U.S. patent system cannot and will not continue down the same path.

There was no warning for those in attendance that Iancu's speech would be a major policy speech; I know, because I was there. After the speech was over there was a buzz, and the common reaction was that it sounded good but that it was going to be important to re-read the speech to see what was actually said, versus what was heard. Such reaction was a nod to the political reality that sometimes what one hears at an event comes across quite different in writing.

The Wright Brothers have been vilified as public enemy No. 1 simply because they had the audacity to have invented the first successful airplane and sought U.S. patents.

After reading the transcript of Director Iancu's speech, it seems clear that the USPTO is preparing the industry for change.

As hopeful as all of this should seem to inventors and patent owners, perhaps the most insightful part of Director Iancu's recent policy speech can be found in one direct and one indirect reference to two inventors who over the past several years have rather inexplicably become the face of what it means to be a patent troll: the Wright Brothers.

Pioneers to be celebrated

Ask those who have little regard for inventors and no respect for U.S. patents about the Wright Brothers, and you will rather directly be told they were patent trolls. You might even be told that what they

accomplished wasn't particularly remarkable, that it was only a matter of time before someone would have invented the airplane anyway.

These comments about the Wright Brothers, the individuals who invented the first successfully powered airplane, are what passes for thoughtful and insightful commentary in some circles. But the Wright Brothers were not patent trolls, and it has been frustrating to listen to those within the industry re-write history and vilify them as if they were public enemy No. 1 simply because they had the audacity to have invented the first successful airplane and sought U.S. patents.

Here is what Director Iancu had to say about the Wright Brothers:

"At my swearing-in, I remarked that through the doors of the U.S. Patent and Trademark Office comes our future. And indeed, it does, and it always did. We must celebrate that. From Thomas Edison to the Wright Brothers, from Stanley Cohen and Herbert Boyer to Steve Jobs, American inventors have fueled the imagination of our people for generations. We are a pioneering people who overcome large obstacles in order to realize our dreams and create prosperity.

"Inventors help make dreams reality, and American invention changes the world. Indeed, with American patents, humans made light, began to fly, treated disease, and enabled instant communications across the globe from tiny devices in our pockets."

It is good to again hear the Wright Brothers spoken of as champions of innovation, rather than villains.

We certainly do need to celebrate great inventors responsible for fueling imagination for future generations. That is how and why future generations aspire to become inventors. There should also be no harm in recognizing the tremendous contributions of the American patent system, which when properly calibrated incentivizes inventors to attempt the impossible and investors to provide the capital necessary to realize those dreams.

Signs are pointing in a direction long hoped for by innovators and patent owners. 🐾



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IoT Corner

CloudPets, connected plush toys for kids, were banned from being sold on Amazon due to security concerns on June 5 after being yanked from Wal-Mart and Target shelves the week before.

The product allows caregivers to interact with their children from outside the home by reading them stories or sending them messages from an app to the plush toys. It is made by Spiral Toys.

Internet consumer advocate and web browser company Mozilla uncovered the security issues with the device, which has unsecure firmware that can be hacked to record the environment of the user via hacking the Bluetooth connection. It is a major privacy issue for families and a warning for other connected toys on or about to enter the market. —Jeremy Losaw



What IS that?

Embarrassed by using your cell phone during a meal with family or friends? Worried about the proven danger of holding your phone and talking while driving? The **NoPhone**—a plastic block with nothing inside—is a great gag gift/social commentary for the countless millions who are tethered. On the product's Kickstarter page a few years ago, its creators said you can “always have a rectangle of smooth, cold plastic to clutch without forgoing any potential entanglement with your direct environment.” The NoPhone campaign raised \$18,000.

Wunderkinds

Audrey Larson, a ninth-grader from Wallingford, Connecticut, is addressing the tragic issue of school shootings with her invention **SAFE K.I.D.S.**—a foldable, bullet-proof, panel system for use during a shooting lockdown. A barrier made from kevlar, cellulose nanocrystals and AR500 steel, placed between the shooter and students, protects one corner of the classroom. The panels can withstand multiple hits from an AR-15 rifle. Once the panel system is deployed, a sensor in the hinge automatically calls 911 and sets off an alarm in other rooms. Her invention placed second in her grade at the recent National Invention Convention and Entrepreneurship Exposition.



78%

The percentage of inventors who think their invention will make at least \$1 million, according to a blog at edisonnation.com. Fifty-four percent think their invention will make at least \$5 million. Fewer than 1 percent of inventions make \$1 million for the patent holder.

WHAT DO YOU KNOW?

1 In which century was the electrically powered ceiling fan invented—18th, 19th, or 20th?

2 Who among this group is not in the National Inventors Hall of Fame?

- A) Bill Lear B) Alfred Nobel
- C) Isaac Merritt Singer D) Nikola Tesla

3 Which was invented first—the Slinky, or the garbage disposal?

4 **True or false:** The under-dash car record players invented in the 1950s and early 1960s were short-lived because the needle would jump too often.

5 **True or false:** The iconic Rolling Stones tongue logo that dates to 1971 is copyrighted.



ANSWERS: 1. 19th. Philip Diehl, who had engineered the electric motor for the first electrically powered Singer sewing machines, adapted that motor for use in a ceiling-mounted fan in 1882. 2. C. 3. The garbage disposal was invented by architect John W. Hammes in 1927, the Slinky by mechanical engineer Richard James in 1943. 4. False. Consumer Reports' tests of the RCA Victor and Norelco Auto Mignon showed they were unaffected by rough roads, sharp breaking or sway. However, the stylus wore down records from the high pressure needed to keep it in place. 5. True, per quora.com. It is also trademark protected.

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