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We're bringing the power of innovation and intellectual property (IP) into the conversation to support startups, entrepreneurs, small business owners, educators, and learners.

Stop by our booth at the SXSW Creative Industries Expo, and learn from the experts at these USPTO-led panels:

- **SXSW: How to build and protect your brand: From startup to scaleup** — March 8, 11:30 a.m. to 12:30 p.m. CT. Learn how to create your brand, protect your IP, secure capital, and scale up manufacturing and distribution.
- **SXSW EDU: You belong! Unlock the power of invention education for all** — March 7, 11 a.m. to 12:30 p.m. CT. Empower learners of all backgrounds and differing abilities to see themselves as inventors, entrepreneurs, and changemakers.



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Photo by Run, Wag, Learn
(@runwaglearn)

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Give no quarter to Patent Pirates.

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Our ideas and innovations are precious. Yet Big Tech and other large corporations keep infringing on our patents, acting as Patent Pirates. As inventors, we need to protect each other. It's why we support the STRONGER Patents Act. Tell Congress and lawmakers to protect American inventors.



SaveTheInventor.com



Eureka! A Great Match

USPTO's experts, resources, and women's entrepreneur panel are major impacts at world-renowned Consumer Electronics Show

The USPTO, CES, and IP go together like children and ABCs.

The largest intellectual property (IP) organization in the United States—the country with the world's largest economy—again commanded a significant presence at the Consumer Electronics Show (CES) January 9-12 in Las Vegas. America's largest technology trade show, with more than 135,000 attendees, 4,300 exhibiting companies, and over 1,400 startups, also hosted a fireside chat, “Protecting America's Best Ideas: A Conversation with USPTO Director Kathi Vidal,” on January 9 and an illuminating hour-long USPTO panel, “Empowering Women's Entrepreneurship: Leading Women Leading Change,” on January 11.

USPTO staff met with stakeholders of all kinds to share information and resources about protecting IP. Part of that mission is informing the public about the USPTO's latest programs and activities, while learning about customer needs.

“We get questions about protecting IP in multiple countries,” said Paul Rosenthal, communications manager at the USPTO. “And we give suggestions on who to reach out to if the USPTO is not the right resource. It's a wide spectrum.”

One strong focus of the show for the USPTO is a segment called Eureka Park (appropriately registered as a trademark), which CES calls the “Launching Pad of Innovation.” Showcasing hundreds of startup businesses from around the world, booths at Eureka Park are an endless parade of high-tech wizardry and next-generation innovation covered by media throughout the world.

Rosenthal said the USPTO was first invited to CES about 10 years ago. “We had a small exhibit booth set up for a couple of years to test the waters. And by 2019, we were collaborating with other government agencies to create the presence you see today at Eureka Park.”

The USPTO is very hands-on in helping stakeholders at the event.

“We've helped people new to IP protection understand the difference between a patent and a trademark,” Rosenthal said, “and how they can use both to help build success.”

“We've helped many people walk through the sometimes-complicated processes and rules so they're not as daunting as when you may first encounter them. And we can walk them through our website so they can understand how to use our patent and trademark search tools.”

Under Secretary of Commerce for Intellectual Property and Director of the USPTO Kathi Vidal (left) said it was “a success story” that the Consumer Technology Association and CES facilitated the discussion on women's empowerment. Panelists, from second left: Katherine Dei Cas, EMD Electronics; Suezette Robotham, Salesforce; and Sonia Wadhawan, Google LLC.

The USPTO has also established a U.S. government exhibit pavilion where CES attendees can learn directly from government experts.

Rosenthal added: “Over the last few years, in fact, we’ve invited other government agencies that provide related services to the public to come join us. So, visitors can also get information, advice, or leads on grants and loans from agencies such as the Small Business Association, or even from some elements of the Department of Defense.”

The USPTO’s information-based presence was complemented by a fireside chat and panel on women’s entrepreneurship that provided insight and encouragement.

AI’s role in innovation, IP protection for startups, inclusive innovation, and what government can do to help were topics discussed during the fireside chat on the Eureka Park Startup Stage between Tiffany Moore, senior vice president, Political and Industry Affairs at the Consumer Technology Association (CTA) and Under Secretary of Commerce for Intellectual Property and Director of the USPTO Kathi Vidal.

Money, IP, and mentorship were identified as the three most important components for women entrepreneurs by the panel hosted by Director Vidal.

Joining Director Vidal were Katherine Dei Cas, executive vice president, delivery systems and

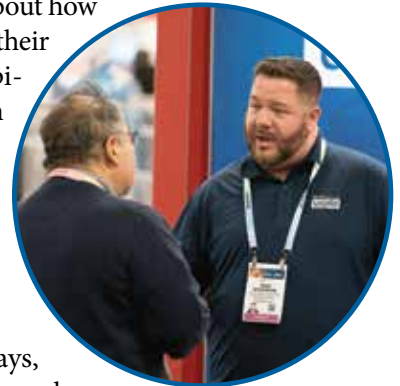
services, EMD Electronics; Suezette Robotham, senior director, executive recruiting equality strategy, Salesforce; and Sonia Wadhawan, director, global business development, Google LLC.

All panelists sounded optimistic tones in the face of historic and continuing challenges for women in business.

Responding to Vidal’s question about how women entrepreneurs can increase their chances of receiving venture capital funding—a chronic problem area for them—Dei Cas said: “The first thing that it starts with is just asking. Asking how you can do that. ... Look at ways that you can find ways to open the doors, because there are so many opportunities.

“There are so many different ways, through the U.S. government as an example, that can help with some of those things, where there are traditional barriers to venture capital.”

Vidal said it was “a success story” that the Consumer Technology Association and CES facilitated the discussion. “That’s CTA and CES investing in you, whether you’re online, whether you’re in the room. It’s them recognizing we need more women in entrepreneurship, we need it for so many reasons, and they’re doing their part as well.”



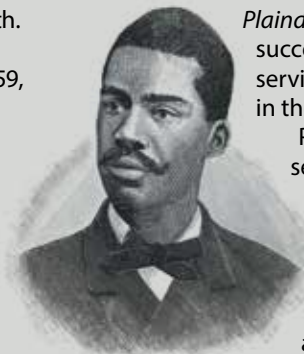
USPTO outreach team member Sean Wilkerson shares information on IP protection with a CES attendee.

MAGIC MOMENT

ROBERT PELHAM: INVENTOR, CIVIL AND PUBLIC SERVANT

Robert Pelham’s story of civil and public service in the late 1800s and early 1900s is an inspirational slice of life for Black History Month.

Pelham was born in Petersburg, Virginia in 1859, but his family moved to Detroit shortly after his birth. His parents sought more educational opportunities for their children than allowed by the strict literacy laws for African Americans in pre-Civil War Virginia.



Pelham began his career as a journalist, and he and his brother were founders of the *Detroit Plaindealer*, one of the first successful newspapers serving the Black community in the city.

Pelham moved into civil service in the late 1880s—first as an oil inspector in Michigan, then on to several national appointments.

He spent 37 years at the U.S. Census

Bureau. During that time, in 1905, he invented and patented a pasting apparatus that applied adhesive to strips of paper.

Before Pelham’s pasting apparatus, a Census department clerk had to manually paste statistical slips on sheets and organize them. It was messy and required multiple employees. Pelham’s invention automated this process.

Pelham was involved in the civil rights movement and served on the leadership of a scholarly society for Black intellectuals.

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JOURNEYS OF INNOVATION

The Cactus Chemist

Family inspiration sparked Dr. Norma Alcantar's influential research career

BY WHITNEY PANDIL-EATON AND JAYDE STEWART

Among the things you'd expect to find in a chemical engineer's office—honorary awards, patent plaques, and books including “Environmental Analytical Chemistry” and “Introducing Chemical Engineering Thermodynamics”—Dr. Norma Alcantar's office at the University of South Florida also showcases her love of life and teaching with books such as “Intentional Integrity.”

But hidden between the intellectual and inspirational materials, two sets of objects stand out: a series of cacti and owl collectibles.

The folklore wisdom of the owl and the hardy but elegantly designed cactus plant represent the tapestry of her life and career. They are also the embodiment of two fundamental forces that have guided her life and career: her mother, Acrelia Alcantar, and her grandmother, Balbina Zamora.

The owl, a symbol of wisdom since ancient Greece, is a reminder of her grandmother's insistence on academic pursuits; her mother's advice about identity and self-determination when Alcantar came to a fork in the road; and, presently, for Alcantar to pass along her decades of knowledge to the next generation—even at 2 a.m. in a phone call to a graduate student halfway across the globe.

Enduring challenging conditions through innovative adaptations, the cacti represent the teachers who inspired Alcantar's curiosity about nature and a serendipitous conversation in youth that altered the trajectory of her life and career. This resulted in more than 20 patents, focused mainly on cacti and Alzheimer's research, and invitations from around the world for her expertise on water purification technology.

Her lips quiver as she reminisces about her mother and grandmother and the lessons taught

and learned: respect for nature, self-determination, work ethic, and mentorship.

“[Acrelia] was the force of the family,” Alcantar said of her mother, who was one of 12 children. “Everybody respected her.”

Widowed at a young age, her mother was a tireless worker who encouraged young Norma to study hard, and be confident in her abilities.

Alcantar recalled a conversation she had with her mother when she was 7. She told her mother she wished she had been born a male because she believed boys had more opportunities than girls.

“Listen, as a girl you can do whatever you want. You can do even more things,” she recalled her mother saying.

Alcantar said she was talking to her grandmother about what she had done in her high school chemistry class one day when Balbina shared knowledge that would later shape Alcantar's career: that cacti can be used to clean impurities from water.

Her grandmother grew up in Michoacán, a region located in western Mexico, in the early 1900s. Alcantar said her grandmother told her that as a child she needed to gather water from nearby sources. If the water was dirty, they boiled the water with cactus to clean it.

“How does that work? It just doesn't make sense,” she said. “But when I came to the U.S., that's what started my research.”

After receiving undergraduate and graduate degrees in Mexico, Alcantar moved to Santa Barbara, California, to pursue her doctoral degree in chemical engineering at the University of California- Santa Barbara.

Alcantar's research focuses on a gelatinous substance called mucilage, the result of boiling cactus pads. Mucilage can expand the molecular removal of harmful substances from water and soil.



Alcantar's technology has been used in numerous applications around the world—including Mexico, Bangladesh, and notably in Port-au-Prince, Haiti, in the aftermath of the earthquake that devastated the island in 2010.

For the entire story, see uspto.gov/learning-and-resources/journeys-innovation.

PHOTO BY JAYDE STEWART/USPTO

REGIONAL HOMES

Eastern Regional Outreach Office: Casting a Wide Net

The USPTO's Eastern Regional Outreach Office is based in the Alexandria, Virginia, headquarters of the USPTO. It serves Connecticut, Delaware, District of Columbia, Georgia, Florida, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, North Carolina, Pennsylvania, Puerto Rico, Rhode Island, South Carolina, Vermont, Virginia, and West Virginia.

As with other regional offices, the Eastern Regional features many services that include attending events, consulting on-site patent and trademark experts, viewing Patent Trial and Appeal Board proceedings, and more.

Eastern Regional Outreach Director Elizabeth Dougherty carries out the strategic direction of Kathi Vidal, the under secretary of commerce for intellectual property and director of the USPTO. Dougherty actively engages with the community and ensures the USPTO's initiatives and programs are tailored to the Eastern United States' unique ecosystem of industries and stakeholders.

The USPTO recently announced it will establish a new community outreach office in Strafford County, New Hampshire, catering to northern New England, about 500 miles north-east of the Eastern Regional Outreach Office.



NEWS FLASH

NEW POLICY OFFICER:

Sharon Israel has been named chief policy officer and director for international affairs, overseeing the agency's Office of Policy and International Affairs (OPIA).

As chief policy officer and director for international affairs, Israel will serve as a principal adviser to Under Secretary of Commerce for Intellectual Property and Director of the USPTO Kathi Vidal, and Deputy Under Secretary and Deputy Director Derrick Brent on domestic and international policy matters related to intellectual property protection and enforcement, and on IP-related trade issues. These include proposed legislation and international activities of the United States.

Jack Fleming was named chief communications officer, overseeing the agency's communications team. The appointments were effective January 8.



CHINA IPR TOOLKIT: A revised edition of the China Intellectual Property Rights (IPR) Toolkit is now available from the USPTO that describes numerous recent changes made to China's IP-related laws and government structures.

The Toolkit offers an in-depth look at the basics of protecting IP rights in China, including trademarks, patents, copyrights, and trade secrets. It also provides an overview of China's IP environment, details about IP enforcement, and a list of valuable China IPR resources that can help rights holders who do business in China.

The Toolkit is available as a free download from the USPTO website.

WHAT'S NEXT

DOCX WEBINARS: Join the USPTO for training webinars on how to file in DOCX through the Patent Center. Register for one of the next available trainings, scheduled for February 1, 6, 8, 13, 15, 27, and 29 at uspto.gov/about-us/events/patents-docx-filing.

During the training, the eCommerce Modernization (eMod) team will conduct a demonstration using the Patent Center training mode. Each session takes about an hour and includes time for questions, as well as an opportunity to use the training mode to practice DOCX filing.

Once you have registered, you will be emailed instructions for joining the webinar before your session. We encourage applicants to use the Patent Center training

mode to practice filing in DOCX without saving or storing data to USPTO systems.

Beginning January 17, those filing new, non-provisional utility patent applications with specification, claims, and abstract in non-DOCX filing formats will incur a surcharge. The option for applicants to provide a backup PDF, or auxiliary PDF, version of their application with their DOCX version remains available.

You can find more information and resources, including FAQs and an instructional video, on the DOCX information page at uspto.gov/patents/docx. For assistance, questions, or feedback, email eMod@uspto.gov.



Visit uspto.gov/events for many other opportunities to attend free virtual events and/or training.

Newest NIHF Class Features Tech Titans



National Inventors Hall of Fame inductees are a small world. So it was fitting that the 15 latest members of America's most prestigious inventing fraternity were announced January 17 at the Walt Disney Imagineering campus in Glendale, California.

They will be honored on May 9, in partnership with the United States Patent and Trademark Office.

The announcement was made on the home turf of new NIHF member Lanny Smoot. He leads the Disney Co. with more than 100 patents.

Among Smoot's inventions and innovations are, per the NIHF, "special effects, interactive experiences, new ride vehicle and robotic concepts, and other technological advancements for Disney's theme parks, attractions, resorts hotels and cruise ships."

The NIHF announcement came just days before this issue of *Inventors Digest* went to print. Further, more complete coverage is coming in the March issue.

But for now, a brief listing of the other 14 new members:

James Allison invented immune checkpoint blockade therapy, an effective treatment for cancer.

Shankar Balasubramanian and **David Klenerman** co-invented sequencing-by-synthesis, a DNA sequencing method that enabled possible efficient, low-cost and large-scale genome sequencing.

Eric Betzig and **Harald Hess** co-invented a super-resolution imaging technology called photoactivated localization microscopy, enabling scientists to distinguish individual molecules.

Andrea Goldsmith created technical innovations including adaptive beamforming for multi-antenna Wi-Fi.

Asad Madni led the development and commercialization of the MEMS gyroscope for aerospace and automotive safety.

Xiaowei Zhuang introduced a method of super-resolution imaging—stochastic optical reconstruction microscopy, or STORM.

These six were honored posthumously:

Joseph-Armand Bombardier invented the Ski-Doo® snowmobile.

George Washington Murray invented agricultural machinery designed to accelerate planting and harvesting processes.

Mary Florence Potts invented an improved sad iron.

Alice Stoll led the development of fire-resistant fabrics.

Chemist and entrepreneur **Jokichi Takamine** was a biotechnology pioneer.

Automotive engineer **Ralph Teetor** invented cruise control.

—Reid

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CORRESPONDENCE

Editor's Note

(November 2023)

The subject was new official dictionary words and the editor's tongue-in-cheek contempt for "horrific"—which has become commonly overused in the past decade or two.

Something you wrote caught my eye and led me to check: "Horrific," according to Merriam-Webster (the official dictionary of my life), is borrowed from French and Latin: French horri-fique, going back to Middle French, borrowed

from Latin horrificus "inspiring awe or dread, frightening," from horrere "to be stiffly erect, bristle, shudder, shiver." First known use: 1653.

You owe me a smashburger!

—DENNIS ROSENBLUM, DETROIT

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RESIGNATION STOKES QUESTION: WHAT IS PLAGIARISM?

Claudine Gay's resignation on January 2 as Harvard University's president following plagiarism allegations renews an ongoing debate: When should copying text be a punishable offense?

The act of taking part or all of a person's original work and presenting it as his or her own, plagiarism is especially frowned upon in academia—where original thought is the essence of intellectual and creative expression. But what crosses the line? Did Gay cross that line?

The threshold is strict at universities. When referencing another writer's work, according to *Bloomberg News*, some universities recommend using no more than three consecutive words (not counting articles and conjunctions) from another source without giving credit. Others say five.

But is that too strict of a guideline? Does the ease of finding and repeating information in the Internet Age change that equation?

And what about AI algorithms that reproduce language in a human way?

If AI words are replicated by a human and they are seen as plagiarism, who or what is guilty of the offense?

Amid some claims that Gay—Harvard's first black president—was being penalized due to criticism over her handling of antisemitism on campus, others focused on the subject at hand.

"If Gay didn't violate any standards of research, why would she need to correct anything?" the *Boston Globe* wrote.

At Harvard, the university's Governing Council issued a press release that seemed to admit problems with instances of plagiarism by Gay but never used that word. An anonymous undergraduate member of the Harvard College Honor Council demanded her resignation lest the university be guilty of a double standard.

"Gay's corrections were not proactive but reactive—she only made them after she was caught," the person wrote. "And that the Corporation considers her



corrections an adequate response is not fair to undergraduates, who cannot simply submit corrections to avoid penalties."

Plagiarism is usually not illegal; it's more of an ethical violation. But it can prompt legal action if it infringes on an author's copyright, patent or trademark.

"I think the idea that one should never ever copy somebody else's words is a bit outdated," Lior Pachter, a computational biologist at the California Institute of Technology in Pasadena, told the website *Nature*.

But isn't precisely that kind of thinking that leads to the kind of casual attitude about plagiarism that violates the sanctity of individual creative ideas? That rightfully has consequences. —Reid Creager

BRIGHT IDEAS



mui Board Gen 2

SMART HOME HUB
FOR PLAYFUL MOMENTS

muilab.com/en

The makers describe mui Board Gen 2 as a “natural home wellness companion that controls your connected home and enriches family moments ... a stress-free interface for the home.”

The system supports Matter, the latest communication standard that enables devices to work across different connectivity ecosystems. This expands the range of appliances and IoT devices you can control with the board (lighting, air conditioners, blinds, smart speakers, smart locks and more).

The mui Board Gen 2 enables you to control your home environment through its intrinsically comforting natural wood interface, which features hand-drawing functionality and more. It will retail for \$799 and ship to crowdfunding backers in December.

Skyted

SILENT MASK FOR
CONFIDENTIAL VOICE CALLS
skyted.io

In cooperation with Airbus, ONERA and ESA (European Space Agency), Skyted Silent Mask was designed to use jet engine-dampening technology to muffle the wearer’s voice by up to 80 percent in crowded spaces. Your voice is absorbed and doesn’t go out, and external environment doesn’t come in while the wearer has open-air ventilation.

You can take silent calls while playing or working—which could have added significance if in-flight calls become permitted.

You can calculate your unique sound bubble directly from the product app and tailor it to varying degrees of privacy.

Projected to retail for \$599, Skyted is to be shipped to crowdfunding backers in December.





TriHear Convo

HEARING AMPLIFIER
WITH REMOTE MICROPHONE
trihear.com

TriHear Convo's main three functions are as a hearing amplifier, remote microphone and TV listening system.

Once turned on, the hearing amplifier automatically connects to the microphone. Users can stream a person's voice directly into the hearing amplifier from up to 98 feet away, with noise reduction up to 16 decibels.

Features include separate volume control for each ear; open eartips; and 16-millisecond latency (audio delay). The device has up to 24 hours' battery life with a 50-minute charging time.

TriHear Convo retails for \$220.

"Accident is the name of the greatest of all inventors." —MARK TWAIN

Doori

SKEWER COOKER
doori.co.uk

If you can skewer it, you can cook it in the Doori—which comes with six stainless steel skewers, each big enough to hold half a chicken. It's large enough to cook three chickens at once but weighs only 33 lbs. with skewers.

The Doori is easy to use. Add lit charcoal or pre-lit briquettes and replace the lid. While it's heating up, taking about 15 minutes, skewer your food and insert when ready. You don't have to stand over or turn the skewers.

The patented design ensures heat transfers evenly around the food and the hot charcoal heats the skewers, allowing the food to cook from the inside out.

Doori is set to retail for about \$725, with an April shipping date for crowdfunding backers.



Jackpot! And Trouble

THE SLOT MACHINE WAS AN IMMEDIATE HIT THAT SPAWNED MORAL OBJECTIONS AND LEGAL PROBLEMS **BY REID CREAGER**

“THAT WAS MY QUARTER!”

An incredulous Cameron Diaz yells the only audible line during the crazed slot machine celebration in the 2008 movie “What Happens in Vegas.”

Although there are perhaps more memorable slots scenes in cinema than her \$3 million jackpot with co-star Ashton Kutcher (see sidebar list), Kutcher being tackled by a friend and then hugging his electronic benefactor is what the inventor of the slot machine had in mind.

The slot machine’s creation is widely attributed to Charles Fey, a Bavarian-born car mechanic in San Francisco, in the 1890s. But for much of its history and still in some places today, the “one-armed bandit” has been about as welcome as the real thing.

A maker’s apprenticeship

Fey lived in several countries and held many different occupations before making his career-changing pull.

According to winkslots.com, he moved to France in 1877 and worked three years for a company that made intercom equipment. Then it was off to the United Kingdom, working for a manufacturer of nautical equipment. He moved to America around 1885 and was employed by Electric Works, an electrical engineering and manufacturing company. He and Theodore Holtz left to form their own company to manufacture telephone, telegraph and electric equipment.

All this experience with making equipment work played into his signature invention.

Most sources say Fey built his first coin-operated slot machine in 1894. According to Britannica, he built the 4-11-44 in his basement in 1885. It was such a hit at a local saloon that he quit his job and opened a factory to produce more units.

His next iteration, the Card Bell, had a handle that set the reels in motion when it was pushed down and playing card suitmarks that lined up to form poker hands.

POP CULTURE PULL

Among the most famous slot machine-related scenes in the movies:

In **“Casino”** (1995), main character Sam “Ace” Rothstein (Robert De Niro) fires his slots manager, Don Ward (John Bloom) after three huge payouts on one of many machines situated around the casino.

In **“Casino Royale”** (2006), James Bond (Daniel Craig) hits a slot machine jackpot after winning a high-stakes poker game. Smoooooth.

In **“Ocean’s Thirteen”** (2007), Rusty (Brad Pitt) plays a slot machine in an airport lounge, gets up—and then a food critic and “Very Unimportant Person” in the crew (David Paymer) hits an \$11 million jackpot. The machine was rigged by the crew to make amends for his bad experience with them.



Immediate challenges

Fey's next slot machine became iconic—and in some ways, notorious.

The Liberty Bell, built between 1895 and 1899 (reports vary), used horseshoes and bells as well as playing card suitmarks on the reels. Three bells lined up in a row meant the top payout, the same format that exists today.

1883 magazine says the Liberty Bell was the first-ever machine to feature the three-reel slot and deliver automatic payouts. It was an immediate success in San Francisco, where Fey distributed about 100 machines.

But the fact that the slot machine is a gambling device resulted in immediate challenges. Fey could not patent the invention, which was soon banned in San Francisco.

Britannica reports that by the time of that ruling in 1909, there were about 3,300 slot machines in the city. Faced with losing his business, Fey (and competitors) had to come up with a workaround. So they built machines with no coin slots, in which purchase and payout—perhaps in drinks and cigars—occurred surreptitiously across a saloon counter.

In fact: Ever wonder why fruits are used as symbols on slot machines? That's also connected to circumventing legal restrictions.

Per Britannica, these were first used in 1909 by Industry Novelty. The company called its machines chewing gum dispensers and replaced the suitmarks with fruit symbols associated with flavors of chewing gum. It even made machines that dispensed gum.

Ever wonder why fruits are used as symbols on slot machines? It's connected to circumventing legal restrictions.

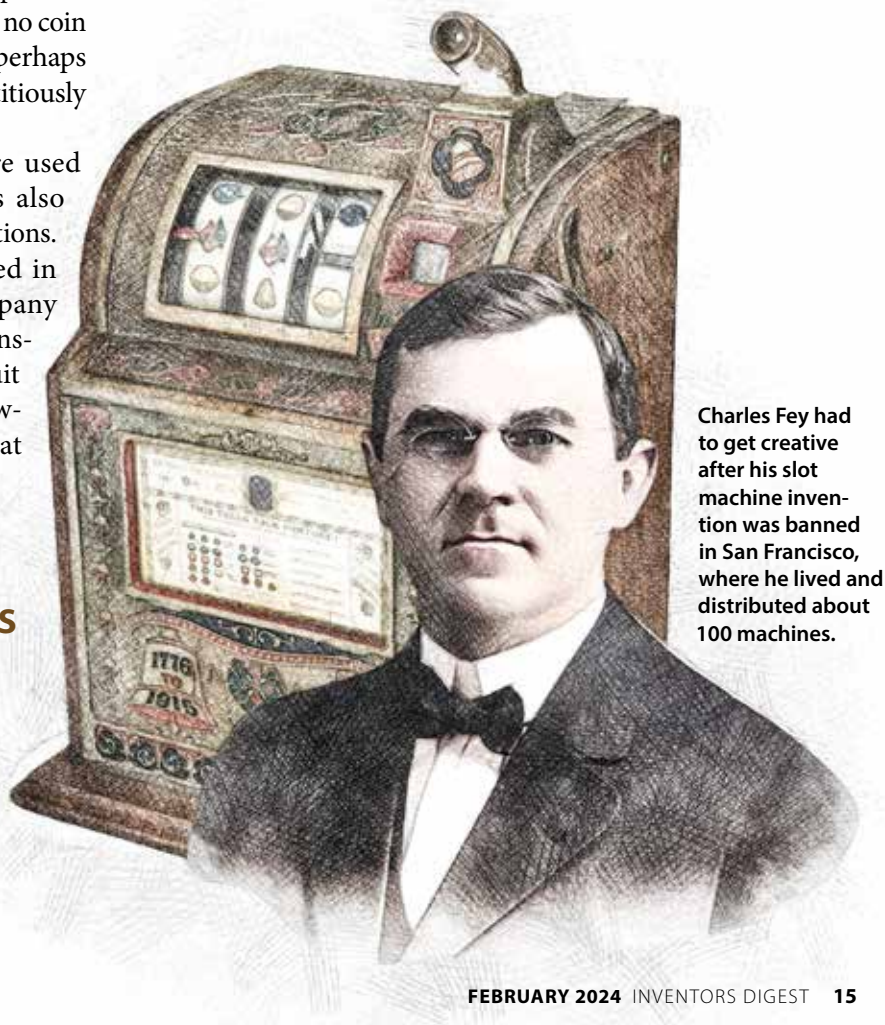
Links to organized crime

The forever lure of easy money with one pull kept slots popular throughout much of America well into the 1900s, especially in resort areas where they were not as visible. But they also became a vehicle for organized crime—further damaging an industry that many perceived as immoral and promoting gambling addiction.

Many states cracked down, enacting legislation that restricted the sale and transportation of slot machines. Their use was largely restricted to private social clubs.

Untapped New York writes: “While organized crime in America has made its mark most memorably on industries like alcohol, drugs, sanitation and construction, the slot machine industry also embodies the fundamental nature of mafia racketeering.

“Not only was the supply side dominated by a monopoly, but the demand side was also



Charles Fey had to get creative after his slot machine invention was banned in San Francisco, where he lived and distributed about 100 machines.



The Liberty Bell became an iconic slot machine before notorious crime figure Frank Costello and others got involved in the production of slots in the 1920s.

rigged, targeting populations least able to afford such vices. All the major figures of mafia operation were involved—Lucky Luciano, Frank Costello, Vito Genovese—enabling the slot machine industry to develop into a national activity that relied on interstate commerce and local support.”

Costello became a pivotal figure here. *Untapped New York* reported that according to Allan May, a crime historian and columnist for the *Cleveland Plain Dealer*, Costello worked with partner “Dandy Phil” Kastel in slot machine and gaming racketeering: “The slots were shipped inter-state from Chicago from the Mills Novelty Company and placed in mundane, highly trafficked locations such as restaurants, bars, drugstores, bus stops and gas stations. Costello and Kastel were able to evade the law by rigging the machines to dispense mints, and the duo even founded the Triangle Mint Company to control the production of the mints.”

Tax revenue’s powerful lure

Even in the face of this stigma, slot machines came into worldwide use after World War II. The prospect of strong tax revenue was too great for individual states and communities to ignore.

The renaissance of slots brought more innovation. Per Britannica, in the 1950s electro-mechanical slot machines allowed new payout schemes, such as three- and five-coin multipliers, where payout amounts are proportional to the number of coins inserted before the handle is pulled.

Video slot machines, which simulate reels using a monitor, debuted in Las Vegas in 1975. Although some traditionalists prefer the sensory elements of pulling down a handle and the sound of the reels lining up, others like this simpler and updated method.

And of course, the emergence of the internet begat online casinos where people can play various gambling games, including the slots, from the comfort of their homes. However, critics say this convenience can increase the chance of gambling addiction, and that these casinos often do not provide an immediate remedy if a problem comes up.

Slot machines are still not openly embraced everywhere.

Ownership by private individuals and bars are heavily regulated to prevent people from buying used machines for commercial use—or rigging them to cheat players. In the United States, slot machines remain prohibited in Alabama, Connecticut, Hawaii, Indiana, Nebraska, New Mexico, South Carolina, Tennessee and Wisconsin.

Biometrica.com, a website that provides data and tools to protect gambling-related assets, notes that the invention of the slot machine is closely connected to the invention of the vending machine during the first century A.D. in Roman Egypt, by mathematician and engineer Hero of Alexandria.

There is much irony in this.

Hero’s invention—which allowed people to drop coins in a slot—was in the spirit of personal purity. The slot pushed down a bar to release only a certain amount of holy water so that everyone got their fair share.

Anyone who has ever sat down and had their money gobbled up by a one-armed bandit will assure you that a slot machine does not have the same purpose. ☛

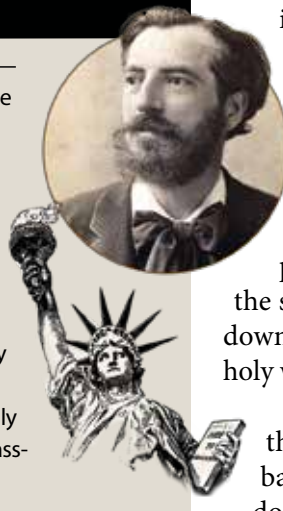
INVENTOR ARCHIVES: FEBRUARY

February 18, 1879: Frédéric Auguste Bartholdi—ironically, a Parisian—was granted a design patent for the Statue of Liberty.

U.S. Design Patent No. 11,028 describes a statue referred to as “Liberty Enlightening the World.” Bartholdi applied for the patent just 47 days earlier.

Among the intricate detail that describes the design:

“The statue is that of a female figure standing erect upon a pedestal or block, the body being thrown slightly over to the left, so as to gravitate upon the left leg, the whole figure being thus in equilibrium, and symmetrically arranged with respect to a [p]erpendicular line or axis passing through the [h]ead and left foot.”



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The Book As Invention

ORIGINAL IDEAS ARE WORTHY OF INTELLECTUAL PROPERTY PROTECTION, EVEN IF NOT USEFUL **BY JACK LANDER**

I'VE OFTEN pondered the question of whether a book is an invention and have never come to a firm conclusion until minutes ago, when I sat down to write my monthly column.

The answer is a definite yes: A book is an invention.

Most inventors, including me, think of inventions typically as three-dimensional material, even hardware, which omits words on paper as a product. The book as we know it doesn't qualify for a patent.

The first movable type book was produced in Germany in 1455, known as the Gutenberg Bible. Although we can't patent the book as such, we can protect the words it contains—providing, of course, that they truly are our words—by inserting the traditional copyright notice in the manuscript up front.

Inventors are creators. Even when we work in tangible materials, we use words to explain our creations.



Think of that. A simple, cost-free stroke of your pen gives you protection similar to a patent that may cost several thousands of dollars.

Ah, but there's a catch. You must attribute any writings you quote from another writer's work by stating his or her full name, and using quotation marks at the beginning and end of the words you have used.

The equivalent of this requirement is found in patent rules. If another inventor has contributed to patentable content of your invention, he or she must be named as co-inventor.

Another advantage to book versus hardware is that you can write gibberish or claim an insane idea or theory and still copyright and publish your book—whereas an invention that obviously isn't useful or violates laws, including the laws of physics, would probably be rejected. Of course, no self-respecting inventor or writer would offer a book of gibberish—unless it was written as humor.

Inventors are creators. Even when we work in tangible materials, we use words to explain our creations. Thus, it is natural that we may have ideas for an invention that is best produced as a book rather than as a tangible item.

I have been both a patent holder and copyright holder. Most of my 13 patents were immediately assigned to my employers because the concept was applicable to the company's product line. But any income from my self-published books or royalties from traditional publishers is mine.

So, am I rich due to my royalties? No.

But I was paid several thousands of dollars up front for my book "How to Finance Your Invention or Great Idea," published as "All I Need is Money," by NOLO. Amazon lists this book but no longer offers used copies.

Trade show moment

Let's start back in 1981. I had finally self-published a book that I had given prior versions

of to friends, who had gotten excellent results from using its guidance.

The title was “How to Write Your Resume and Get the Job.” I loaded my backpack with 25 copies and attended an annual publisher’s trade show in Chicago and walked the aisles.

To my amazement, I came upon the booth of Enterprise Publishing Co. and standing all alone in the booth was Ted Nicholas, the owner of Enterprise and author making megabucks selling his book, “How to Form Your Own Corporation Without a Lawyer,” for under \$50.

I introduced myself and at the appropriate time dragged out a copy of my book on “How to Write Your Resume and Get the Job,” letting Ted know that I was inspired by his long title. He assured me he would consider republishing it through his company.

I continued through the show, handing out a few more copies to less personable booth holders. No responses.

Highs and lows

Ted Nicholas at that time was one of those successful entrepreneurs who were famous and respected as self-made persons whom we don’t dare approach closely—sort of a Henry Fonda of publishing.

Later, when I answered the phone, I heard, “Hi, Jack, this is Ted Nicholas. I like your book very much and would love to republish it. But first, I want you to visit three substantial bookstores and write me a report on each of the books that will compete with yours if we go ahead.”

I agreed, of course. But as I finished my last of about seven reports, I had the sinking feeling we were up against a saturated market. He agreed, and that was that.

However, a few weeks later, Ted called again: “I like your voice (the way I wrote, not talked). I want you to write a book for my company about starting and running a small, part-time business.

I could hardly believe what I had heard: a traditional publisher asking me, an unknown writer, to write a book.

I settled down and began writing. I was 50 years old and had started maybe a half-dozen part-time businesses, mostly during my school years.

I didn’t have any doubts about my qualifications to write Ted’s book. It was finished in about six weeks and was sent an advance on royalties of \$1,500.

I was excited to visit a large California bookstore and see my book, “Make Money By Moonlighting,” on one of its shelves. The book sold out its first edition except for a few copies that Enterprise sold me at its cost. But Ted said sales weren’t fast enough for a second printing.

Lessons learned

I continue to write and self-publish. My list so far is “Hire Yourself: A Startup Alternative,” “Finding Meaning, Purpose, and Self-actualization On Your Own,” and one other title I prefer to remain untold at this time.

Self-publishing is easy. Marketing is a challenge.

I suggest you visit smashwords.com and Amazon.com before writing. Be sure you have an established way to reach your readers before investing time in a book.

Meanwhile, which lessons can be had for tangible inventions from any of my experiences in writing books?

- Books and tangible inventions provide trade show opportunities at which you can meet and speak with folks who are interested in new products. These are often the company’s marketing managers. No appointment necessary.
- You don’t have to be a polished author or inventor with a patent or two in order to attract attention.
- You may not connect offering the product you have in mind, but it may lead to another that’s in your ballpark.
- Nothing may come of your new connection immediately, but it may be valuable at some time in the future.
- Do what you love and were made for. If you don’t feel comfortable with the ballpoint pen in your hand, stick with your Phillips screwdriver. The possibilities are inexhaustible. 🛠

Jack Lander, a near legend in the inventing community, has been writing for *Inventors Digest* for nearly a quarter-century. His latest book is “Hire Yourself: The Startup Alternative.” You can reach him at jack@inventor-mentor.com.



The Chatbot Difference

USE AI-DRIVEN VIRTUAL ASSISTANTS TO HELP YOU BUILD CUSTOMER LOYALTY IN MANY AREAS **BY ELIZABETH BREEDLOVE**

IN THE ever-changing landscape of digital marketing, one innovative tool that has slowly transformed how businesses interact with their audience in recent years is AI-driven chatbots.

These intelligent virtual assistants—created by a computer program that simulates human conversation with an end user—are revolutionizing social media marketing by enhancing customer engagement and streamlining communication. Let's dive into various ways chatbots are reshaping marketing strategies and providing entrepreneurs with a competitive edge.

New step in social media

With social media platforms such as Facebook, Instagram, LinkedIn and X serving as hubs for communication and online interaction personally and professionally for almost two decades, businesses are finding that as the volume of interactions grows, managing customer inquiries, providing instant responses and maintaining a consistent social media presence can be daunting. This is especially true for solo inventors and entrepreneurs with small teams.

This is where chatbots become relevant. These sophisticated programs leverage artificial

intelligence and natural language processing to engage users in real-time conversations. By understanding and responding to user queries with human-like precision, chatbots effectively bridge the gap between businesses and their audience.

Enhanced engagement

One of the primary advantages of integrating chatbots into social media marketing strategies is the ability to improve customer engagement. Unlike traditional methods of customer interaction—where responses are delayed until business hours or automated with a limited range of responses—chatbots provide instantaneous interactions with a personalized feel.

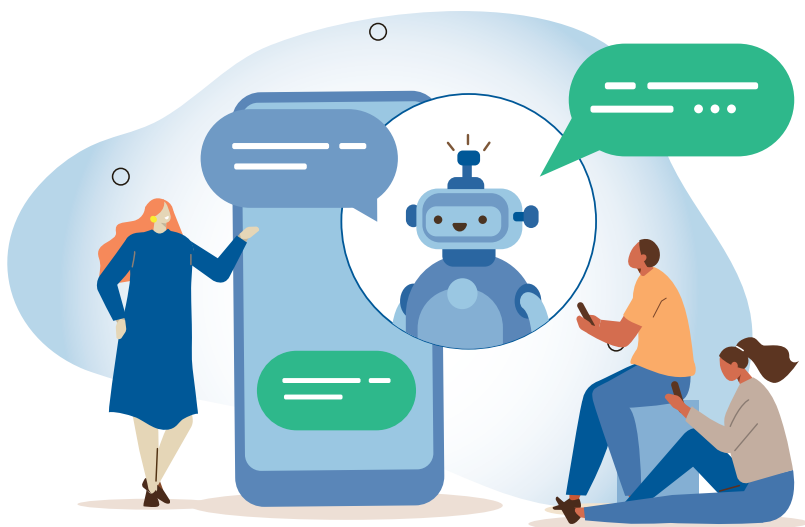
Imagine a potential customer visiting your social media page and inquiring about your product. A well-programmed chatbot can instantly provide detailed information, answer frequently asked questions, and even guide the user through the purchase process. This level of immediacy improves the overall user experience while increasing the likelihood of converting a visitor into a customer.

Furthermore, modern chatbots can learn from user interactions, allowing them to continuously refine their responses and recommendations. This iterative learning process ensures that the chatbot becomes more effective over time, adapting to user preferences and evolving market trends.

Communication efficiencies

With entrepreneurs and inventors often multitasking with a risk of less efficiency, chatbots excel in streamlining communication processes—especially when it comes to customer support. These virtual assistants can handle a wide array of customer queries from product inquiries to order tracking, freeing human resources for more complex tasks.

For instance, if a customer has an issue with a product and contacts a business through social



media, a chatbot can swiftly diagnose the problem, provide troubleshooting tips and even initiate a return or replacement process. This resolves customer issues promptly while helping to develop a positive brand image by demonstrating a commitment to customer satisfaction.

Additionally, the 24/7 availability of chatbots ensures that businesses can cater to a global audience across different time zones. This 'round-the-clock accessibility is particularly advantageous for entrepreneurs and inventors who may not have the resources for extensive customer support teams.

2 methods of targeting

Chatbots excel in personalizing user interactions based on data analysis and user behavior. By leveraging information gathered from social media profiles, previous interactions and purchasing history, chatbots can tailor their responses and recommendations to individual preferences.

Let's say that a user frequently engages with content related to a specific product category. The chatbot can proactively provide updates on new releases or promotions within that category.

This level of personalization creates a more meaningful connection between the user and the brand, increasing the likelihood of customer loyalty and repeat business.

Additionally, chatbots can play a crucial role in targeted marketing efforts. By analyzing user data and preferences, they can initiate personalized marketing campaigns, recommend products and even provide exclusive offers.

This targeted approach enhances the effectiveness of marketing and advertising efforts and ensures users receive content that resonates with their interests.

Data collection, analytics

Data generated through interactions with chatbots on social media platforms is a gold mine for entrepreneurs and inventors. These virtual assistants facilitate communication as well as serving as data collection tools that provide valuable insights into customer behavior, preferences and market trends.

By analyzing data gathered by chatbots, entrepreneurs can make informed decisions about

product development, marketing strategies and overall business direction. For example, if a chatbot notices a surge in inquiries about a specific feature of a product, it signals a potential demand that can be capitalized on through targeted marketing or product improvements.

Furthermore, the analytical capabilities of chatbots extend to sentiment analysis, allowing businesses to gauge customer satisfaction and identify areas for improvement. This real-time feedback loop enables entrepreneurs to stay agile, adapting their strategies based on customer reactions and market dynamics.

In summary, the integration of chatbots into social media marketing can be a game-changer for entrepreneurs and inventors seeking to improve their strategy. As social media continues to evolve, entrepreneurs who embrace the power of chatbots position themselves at the forefront of innovation. 📱

Elizabeth Breedlove is a freelance marketing consultant and copywriter. She has helped start-ups and small businesses launch new products and inventions via social media, blogging, email marketing and more.

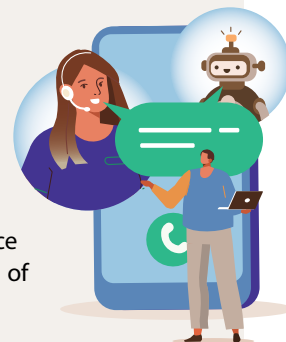


MIND YOUR CHALLENGES AND ETHICS

Though the benefits of integrating chatbots into social media marketing are evident, entrepreneurs and inventors must be mindful of potential challenges. One common concern is the risk of relying too heavily on automation, potentially leading to a lack of human touch in customer interactions.

To address this, businesses should strike a balance between automated responses and human intervention. Designing chatbots with the capability to seamlessly transfer conversations to human agents when needed ensures that complex queries or situations are handled with the care and empathy that only a human touch can provide.

Ethical considerations are also important when using chatbots. Ensuring transparency about the use of chatbots, obtaining user consent and safeguarding user privacy are essential steps in building trust with the audience. Clear communication about the role of chatbots and the measures in place to protect user data establishes a foundation of transparency and integrity.



Please Be Seated

GAMING PRODUCTS VETERAN CREATES, THEN IMPROVES, CHAIR FOR NAVIGATING VIRTUAL REALITY CONTENT

BY JEREMY LOSAW

CREATING AWARD-WINNING gaming products for 25 years hasn't exactly been child's play for Elliott Myers, but he was a young boy when his experience in the gaming world began.

His father was importing audio/visual products from China to England and distributing them to retail stores across the United Kingdom. When a game controller came in with a shipment one day, his dad asked him what he thought about the design.

"I could see that the game's controller could add some features and be improved," Myers recalled. He became interested in designing and building game controllers and in November 2000 began designing Gametrak, the first 3D games controller. Released in 2004 for PlayStation 2, its premise was conceived by Myers in a hotel bathroom.

"I was taking a shower and playing around with one of those retractable washing lines," he told igm.com in 2006. "As I pulled the cord out, I thought if only we could combine this with a joystick mechanism ... yes, as simple as that!"

Myers also launched a series of force feedback controllers, including the first for driving games. Eventually, he got into creating his own video games. But as Nintendo was introducing the Wii, competition in the market increased and he sold his company to start working on what became RotoVR—a special chair and system that allows users to safely and effectively navigate virtual reality content from a comfortable seated position.

RotoVR features a motorized seat that connects to VR headsets. It can track head movements and automatically rotate in the direction the user faces to easily navigate virtual worlds. It features haptic feedback for a more immersive experience and works with all currently available VR content.

RotoVR also has buttons on the footrest to simulate walking in a game or environment. As of this writing, the improved version was to be available in early 2024 for \$699.

Innovation turns 360

The concept for RotoVR stemmed from Myers' observations about how people were experiencing the technology. He was baffled as to why people were always using VR headsets while standing when most other media, such as movies, are consumed while seated.

"VR is a 360-degree medium, and I've always felt that most people would want to sit down to engage with it," he said. "So how do you solve the problem with being able to sit down and consume and interact with a 360-degree medium?"

He took on the massive challenge of building a viable product while in London and launched the first version on Kickstarter in 2015. The campaign failed, but he pressed forward with

Roto VR incorporates various advanced technologies within its auto-rotation functionality system.

The Roto Head-tracker (below) clips onto a user's VR headset and plays a crucial role in the chair's operation by precisely tracking the user's head movements in real time.



“VR is a 360-degree medium, and I’ve always felt that most people would want to sit down to engage with it.” —ELLIOTT MYERS



more direct pre-sales campaigns and raising money. Eventually he learned that at \$2,000 per device, it was too expensive for an evolving market.

Myers got to work developing a leaner and better second generation of the product.

He simplified the product while keeping the great features to make a safe and immersive experience. He gave it wheels instead of a static base, added a safety guard over the chassis, and installed a special motor and gearbox for the rotational movement. The result was a higher-quality product at a retail price of about one third the cost of the original version.

Protection priorities

RotoVR has a robust patent portfolio. After filing a suite of utility patents in the United Kingdom, United States and China to protect his technology, Myers said they have given him strength to raise capital for the business in addition to the protection they provide. He said his Chinese patents may prove most valuable because that is the region where competitors are most likely to emanate and the protection will allow him to shut down anyone who tries to infringe.

RotoVR is assembled in China, with a variety of suppliers providing sub-assemblies.

Myers felt it was a risk to have the device made at a factory that makes products for the gaming industry, so he went with a more general assembly house to keep control of the design. Other components, such as the circuit boards, are made at other facilities and shipped to the assembly house for final assembly.



The firmware is done outside of China to protect the programming; he is secretive about his chip suppliers. This is all to protect the device, as well as the investment and time and money from his team and investors.

Big '24 planned

Myers planned a short production run of 100 units at the end of 2023 to verify all is well with the production specification, ahead of ramped-up production for a springtime launch. The product will be compatible with all VR content out of the box, but he has also released an SDK (software development kit) to allow developers to make bespoke content for the chair. 🎮

Details: rotovr.com

RotoVR features a motorized seat that connects to VR headsets. It can track head movements and automatically rotate in the direction the user faces to easily navigate virtual worlds.

Jeremy Losaw is the engineering director at Enventys Partners, leading product development programs from napkin sketch to production. He also runs innovation training sessions all over the world: wearewily.com/international



Short and Sweeter

NECKLACE SHORTENER FOR THIN CHAINS FILLS
A MARKET GAP THAT SURPRISED INVENTOR **BY EDITH G. TOLCHIN**

I'M JUST A GAL who loves jewelry, writing and meeting new inventors! Meet Daria Walsh of Doylestown, Pennsylvania, who is an inventor of a cool jewelry hack.

Edith G. Tolchin (EGT): Please tell us about your background. And have you worked with jewelry before Infinity Clips?

Daria Walsh (DW): I have always had an entrepreneurial spirit. Even as a child, I was selling toys to my classmates on the playground and began dreaming up my first product inventions at a young age.

However, it wasn't until many years later, after raising two children and having a career in marketing and sales, that I combined my passion for inventing and entrepreneurship to launch Infinity Clips.

When I began, I didn't have any experience in the jewelry industry or product development, but I was convinced my solution was worth bringing to the market. So, I was determined to learn everything I could to turn it into a reality.

EGT: What is the concept behind Infinity Clips?

DW: Infinity Clips is the first necklace shortener designed specifically for thin chains, such as rope chains and snake chains. It allows you to temporarily adjust the length of your favorite necklaces to match your outfit and style.

Infinity Clips can also be used to adjust the length of individual chains, creating a perfectly layered look.

EGT: When did this idea come about?

DW: The idea for Infinity Clips came to me when I was searching for a way to shorten my favorite necklace. I was surprised to find there were no solutions available in the marketplace for thin chains.

Most of the homemade hacks were unsightly, such as using Scotch tape to hold the chains in place. Other solutions, like permanent shortening by a jeweler or buying multiple chains, were expensive and didn't offer the flexibility to adjust to multiple lengths.

I knew I couldn't be the only person in need of such a solution, so I set out to develop my own.

EGT: Did you go through many prototypes?

DW: Oh, yes; more than I can count! I was determined to create a solution that not only had practical functionality and could work with a wide range of chain styles but was also decorative.

I spent many hours wandering through craft and hardware stores, searching for parts that I could assemble into a functional prototype. After a lot of trial and error, I finally developed a prototype that was good enough to bring to market.

EGT: How many styles do you carry?

DW: Currently, I have two sizes of Infinity Clips available in silver, gold and rose gold colors. The small-size Infinity Clips are designed to shorten chains up to 1.3mm thick, while the large size shortens chains between 1.3mm and 2.5mm thick.

EGT: I understand Infinity Clips are patented. Please share that experience.

DW: The journey to getting a patent was exciting and challenging at the same time.



"You can actually get started with very little money by being resourceful." —DARIA WALSH

I started with only \$500, but I knew my invention had potential and I was determined to find a way to patent it and bring it to market. I began by writing my own provisional patent application, which gave me patent-pending status for a year in which I could test market and improve on my product idea.

The test market was a success and ultimately paid for me to hire a lawyer to file for a non-provisional patent. I was issued my utility patent in March 2022.

EGT: Have you done any crowdfunding, or do you plan on applying for “Shark Tank”?

DW: Since I was strategic in bringing my product to market, I did not do any crowdfunding starting out. I went straight to market and rolled over profits for the first couple years to scale my brand.

As I grew, though, I found I needed more capital to keep up with growth, so I took out loans and used interest-free credit cards to fund inventory purchases.

Fingers crossed I'll be pitching to the “Sharks” sometime soon!

EGT: Where are you manufacturing? Are you working with gold, silver or other metals? Do they tarnish?

DW: I currently manufacture in China through a U.S.-based sourcing company. I'm working with silver, gold and rose gold-plated brass, which allows me to offer a high-quality product that doesn't tarnish while still being an affordable option for my customers.

In the future, I plan to expand into using precious metals as well.

EGT: What obstacles or lessons can you share?

DW: Throughout my journey, I've faced challenges with everything, from prototyping and patenting to manufacturing and sales. Sometimes it's about finding the right people to help you on your journey, and sometimes it's about finding the right information on your own to move you forward.

The greatest lesson I've learned along the way is to never give up. As inventors, we are natural problem solvers, and the same skillset we use to invent



products can be applied to building a successful company. We just need to be creative and determined enough to see it through.

Infinity Clips is the first necklace shortener designed specifically for thin chains, such as rope chains and snake chains. It allows you to temporarily adjust the length of your favorite necklaces to match your outfit and style.

EGT: Any new styles or products in the works?

DW: Yes, in coming months, I'll be launching new contemporary styles and colors, along with a larger men's line.

EGT: Do you have any suggestions for novice inventors who plan to develop a new product?

DW: Many people believe that launching and patenting a new product requires a significant amount of money up front. But you can actually get started with very little money by being resourceful.

There are plenty of free resources available to inventors, such as the USPTO's Patent Pro Bono Program and the Small Business Association's free SCORE mentorship. YouTube is also an excellent resource, along with joining inventor groups where you can network and learn from others who have successfully brought their own products to the market. 📧

Details: infinityclips.com, daria@infinityclips.com

Edith G. Tolchin has written for *Inventors Digest* since 2000 (edietolchin.com/portfolio). She is the author of several books, including “Secrets of Successful Women Inventors” (<https://a.co/d/fAGlvZJ>) and “Secrets of Successful Inventing” (<https://a.co/d/8dafJd6>).



The Lure's Allure

FLORIDA WOMAN'S LURE COURSING INNOVATION PROVIDES EXERCISE FOR DOGS—AND A LARGER CALLING

BY EDITH G. TOLCHIN



MEGHAN WOLFGRAM ADORES PETS. “I love everything about pets,” she says. “They make our lives better, and in turn I find myself always thinking about how I can give my pets the best, most fulfilling lives possible.”

She’s not the only one. According to the American Pet Products Association, during 2023, \$143.6 billion in sales were projected for Fidos and Fifis. And about 65 million American homes own dogs. One group on Facebook (Canine Enrichment Ideas), with over 390,000 members, is solely dedicated to sharing enrichment ideas and inspiration.

Wolfgram, the founder of the pet lure invention SwiftPaws in Melbourne, Florida, says there are three core pillars in pet care: nutrition, health care and enrichment.

She defines enrichment as “anything that engages your pet mentally or physically. It’s what you do *with* and *for* your pet to satisfy their desires, drives and natural instincts.”

She summarizes enrichment as the PlayWell movement—which espouses the importance of play for people and pets. To play well is to conscientiously provide healthy outlets for a pet’s energy.

PlayWell also promotes stronger bonds with your pet, resulting in their being happy and healthy. And nothing makes Wolfgram happier than to see her pets happy.

A proven sport

Wolfgram founded SwiftPaws in 2012 after discovering the sport of lure coursing and realizing there was no access to this kind of activity for people and pets in her area.

Lure coursing has been around since the 1970s as a method of allowing sighthounds (greyhound, whippet, borzoi and other similar breeds) to use their natural instincts to chase and hunt by sight without hunting live game. It ensures dogs stay in a defined area, with the mechanical lure zipping around a predetermined course. This allowed a

sport to emerge in which dogs could be judged based on a set of criteria and race to be crowned “top dog.”

Think of a lure coursing system as something like a clothesline: a series of pulleys with a string going around each pulley, forming a closed loop so when you tie a flag, or “lure,” to the line. The flag zips around the course with the help of a single motorized pulley that controls speed and direction.

Wolfgram initially “invented” SwiftPaws because of her desire to offer this fun, enriching product to pet professionals—who could then share it with their own communities. Years later, she realized there was a huge demand for an at-home, backyard version that people could buy for their personal use.

Community commitment

She did not start digging into market data until years later, while developing a consumer version of the product.

Initially, she intended to make machines for professionals such as dog trainers and doggie day cares. She envisioned a world where anyone with a dog that liked to chase would have access to a local SwiftPaws course to provide a healthy, controlled outlet for energy instead of, say, chasing the cat!

Wolfgram says because SwiftPaws has always been a community-driven business, it has the incredible opportunity to grow and pivot to suit a community’s needs. When people kept mentioning how badly they needed a lure coursing kit for their backyard, they made one.

After seeing SwiftPaws on “Shark Tank” in 2022, potential customers shared how much they knew their dogs would love

Although kits are the foundation of the brand, SwiftPaws is also dedicated to offering a growing selection of other products to help you “PlayWell” with your pets.



it but how the (then-current) product was out of their price range. Because of that feedback, the company launched its newest, most affordable version, Chase, for pre-order on the April 8 anniversary of the “Shark Tank airing.” With the help of over 1,000 pre-order customers, the product was brought to life and shipped in time for the holidays that year.

As a pet-centric business, every piece of the SwiftPaws puzzle has been put in place with pets in mind—from a pet-friendly office and warehouse where Wolfgram’s team gets to bring their pets to work every day to the company’s amazing relationships with shelters and rescues

where they get to help the organizations that help pets in need.

SwiftPaws has blossomed into a rapidly growing brand that hasn’t lost sight of what’s most important: the health and well-being of everyone’s pets.

No slips, no errors

The common expression is, “necessity is the mother of invention.” In Wolfgram’s case, necessity, and a little bit of tedium, were her inspirations.

The first lure coursing machine she made, with the help of her dad, had traditional pulleys

Meghan Wolfgram remembers thinking, “Surely, something like this had been done before.” It had not.



that were open spinning wheels. Unfortunately, this meant that the line could easily slip off a pulley, causing Wolfgram to have to walk all the way out to the pulley to re-seat the line—sometimes as far as a thousand feet away. After having to do this multiple times per event, she thought there must be a better way.

After much trial and error, the result was a design that incorporated a housing for the pulley that ensured the line stayed in place. It also included a large window that could accommodate the lure as it went around each pulley and through the machine itself.

She remembers thinking, “Surely, something like this had been done before.” It had not. That ultimately became her first patented invention.

That’s the ticket!

Wolfgram says “Shark Tank” was a magical, once-in-a-lifetime opportunity for her and SwiftPaws. The process felt like a blur; before she knew it, she was in Los Angeles with her dog Piper, pitching to the “Sharks.”

She was hoping for some sort of deal when Lori Greiner offered her the “Golden Ticket”—a pendant made of real gold that Greiner only offers to one entrepreneur per season, if at all. This is Greiner’s way of confirming her belief that the entrepreneur has something special, and that she believes in the person and the brand. With this distinction, Greiner offers a company exactly what it wants with no negotiation.

“I took Lori up on her offer faster than my dog can get to a piece of food dropped on the floor!” Wolfgram says. Through tears of joy, she told Greiner that together they were going to make so many dogs happy.

Groundswell Startups, the nonprofit startup incubator SwiftPaws has belonged to since 2019, hosted a watch party that evening for over 100 of Wolfgram’s family and closest friends. Brevard County is her hometown (she has deep roots in the area), and even her eighth-grade teacher came to cheer her on.

The PlayWell purpose

Today, SwiftPaws offers a family of lure coursing kits ranging from the Chase version all the way up to its pro-grade machine, which can be seen



\$25K SALUTE

Eight days into the new year, SwiftPaws got a \$25,000 boost when it was named one of five startup winners in Purina’s eighth annual Pet Care Innovation Prize.

Nearly 150 companies from around the world applied for the prize. This year’s field included pet enrichment toys, a toothbrush designed specifically for a cat’s anatomy, alternative protein and allergy-friendly pet treats and food, a game-changing microchip that monitors pet health from the inside, and a platform to help organizations provide foster care for pets.

running many events and competitions across the country. These include on ESPN, where it powers the American Kennel Club’s “Fastest Dogs USA” competition each year.

Although the kits are the foundation of the brand, SwiftPaws is also dedicated to offering a growing selection of other products to help you “PlayWell” with your pets. They include flirt poles, critter packs and surprise toys that your pet gets to unwrap.

This year, the company is launching the PlayWell initiative to educate and give back to the community. The initiative includes collaborating with other like-minded pet brands dedicated to enriching the lives of pets; sharing stories from pet parents who are finding creative ways to add playing well into their pet’s lives; and hosting conversations with pet professionals and



ORo Dog Companion Robot



Doggy Bathroom

MORE DOGGED INNOVATION

A 21st-century automated parent for canines. A fancy doggie “whizatorium.” Check out the latest in inventions for dogs:

ORo Dog Companion Robot

Showcased at this year’s Consumer Electronics Show, ORo provides a kind of pet parenting when the dog’s owners are away by navigating the home, enriching play, feeding, managing routines, and keeping watch by using cameras and sensors. The robot, built with advanced AI, is fitted with two-way audio and a video screen so you can interact with your dog remotely.

A built-in dispenser launches treats for your dog on your command. A separate automatic food bowl releases food on schedule, or on command if you’re away during your pet’s regular feeding time. Games range from virtual fetch to active rolling balls.

ORo also aims to learn your dog’s behavior patterns and react with soothing music or physical interaction when it senses distress, restlessness or the desire to play. orobuddy.com

Doggy Bathroom

This modern-looking product purports to be “the only dog litter box that keeps everything in one, easy-to-clean space with vertical pee pads, including dogs who [sic] lift their leg.”

Per wired.com: “The Doggy Bathroom includes a white bin, a base that comes in four colors, and two removable rails. You also get 50 pads, three mats, and six clips. Once you connect the main bin to the base and attach the side rails, you’ll

want to grab clips and four of the pads. From there, stick a pad to the bottom of the bin, and use the clips to secure your other pads to each side of the wall. Place the mat outside of the bin, and voilà! Your dog has its own little private bathroom.”

The concept is that the dog walks into the bin (or is placed in there), does its business, then walks out onto the mat. The high walls should catch any rogue spray if the dog lifts its leg; the mat should keep paws clean and dry. Then the pads go in the trash.

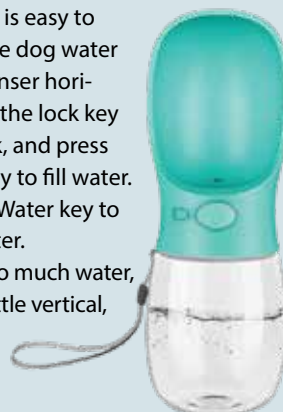
The brand features a Doggy Bathroom x Keith Haring special edition, a curated selection with some of Haring’s classic icons. doggybathroom.com

Kalimdor Dog Water Bottle

More accurately, it’s a leak-proof, portable puppy water dispenser with a drinking puppy feeder for when you’re outdoors with your dog.

Made of food-grade plastic (don’t put it in the dishwasher or microwave), the water bottle is easy to use: Keep the dog water bottle dispenser horizontal, slide the lock key up to unlock, and press the water key to fill water. Release the Water key to stop the water.

If that’s too much water, keep the bottle vertical, and press



the water key to let water flow back. After feeding, slide the lock key down to lock and prevent water leakage.

The product has received an overall 4.6 stars out of a maximum 5 on amazon.com. Look it up there.

Halo Wireless Dog Fence and GPS Dog Collar

The company calls its product “the most accurate GPS dog fence ever created.” It features advanced real-time GPS tracking and activity monitoring—all managed through the Halo app.



This is not a shock collar, which some experts say can have negative effects on dogs. Instead, it provides “warning feedback” via a beep once your dog approaches the edge of the fence; “boundary feedback” that is a vibration if the dog ignores the warning beep; and “emergency feedback”—a painless static pulse that feels like being tapped on the shoulder.

There is also a Return Whistle that lets you call your dog to safety directly from the app, using customizable audio cues; and a built-in dog activity tracker that shows what your dog is up to any time of day. Daily activity charts show you how much time each day your dog has spent in safe areas, on walks, active versus resting, and more.

Technological advancements include PrecisionGPS and an active GPS antenna. halocollar.com

PetSafe Automatic Ball Launcher

This water-resistant toy works best with standard-size tennis balls.

It comes with two and can hold three at a time. Adjust how far the ball is thrown with nine distance settings and six angle settings that launch the ball from 8 to 30 feet.

Electronic motion sensors detect if your pet is within 7 feet of the dog ball launcher hole and won't launch a ball until your dog moves further away or to the side, out of view of the motion sensor. An audible tone signals when a ball is about to be thrown.

The toy will enter an automatic sleep mode after 30 minutes of playtime to give your dog 15 minutes to rest.

You can use the included power adaptor or six D batteries, not included. petsafe.com/product/automatic-ball-launcher



Allergy Test My Pet

With this purportedly easy-to-read report, learn whether your dog has food intolerances; environmental sensitivities; is subject to household allergens, and more. Care tips are also provided.

The test was developed to measure about 100 of the most common allergens to which your pet may react. You also learn which popular supplements and other factors may be causing your pet to react.

According to the product developers: "Often times the easiest solution to insensitivities in pets is to use medicated shampoos, expensive dog foods and prescription drugs. While all of these things may be helpful, they are only masking the problem and not getting to the cause of it. ...

"We advocate discovering the cause of your pet's sensitivities and learning which foods and products are best for your pet—and which to avoid."

atmypet.com



When offered a no-negotiation, Golden Ticket on "Shark Tank," "I took Lori (Greiner) up on her offer faster than my dog can get to a piece of food dropped on the floor!"

industry experts about the evolving landscape of pet care, the importance of enrichment, and why more pet parents are seeking to add a variety of enrichment to their pets' daily activities.

Wolfgram wants to be more than an American manufacturer of lure coursing kits. She can't think of a more meaningful way to do that than by fostering conversations centered around how everyone can help their pets live their best, most fulfilled lives.

When she's not working on her business, she enjoys reading and spending time with friends, family, and—of course—pets.

Asked for advice for prospective pet product inventors, she says, "Go for it! Don't be afraid to put your idea out there into the world, and don't be afraid to utilize the multitude of resources that are available to inventors, entrepreneurs and business owners—like the USPTO's Resource Centers and their amazing librarians who are a wealth of knowledge when it comes to learning more about intellectual property." 🐾

Success? It's Relative

WITH MANY MEASURES OF ACCOMPLISHMENT, YOU MUST DETERMINE WHERE YOUR PRODUCT FITS IN THE MARKET

BY WILLIAM SEIDEL

// KNOW IT WILL BE A SUCCESS."

When I hear this, I ask, "What kind of success?" And no one has an answer.

Success for what? Success for sales, for product use, for licensing, solving a consumer problem or a return on investment (ROI)? Is it a success because of gross revenue, net revenue, profit, market penetration or product position?

To many inventors, success is seeing their creation in stores. However, it is estimated that only one in 10 new products that make it to store shelves remain over one year.

Sales sells it into stores (sell-in), but it is marketing that sells it through to the customer. Sell-through creates repeat orders, generating greater revenue, and profits that sustain the business. The success can be measured by the "velocity" at which the product sells through, which determines the size of reorders.

When you assume ...

Would you have predicted the success of Trivial Pursuit, the Super Soaker, Cabbage Kids, or Teenage Mutant Ninja Turtles?

Many leading experts turned them down. They claimed "Adults don't like trivia games," "Squirt guns are 69 cents," "Rag dolls are outdated," and "Teenage Mutant Ninja Turtles? You can't be serious!"

With all their industry experience, the top toy professionals did not see potential for these billion-dollar superstars. These products were predicted to fail by the experts and licensed to second- and third-tier companies.

This happens when opinions and assumptions replace tests and customer response.

A sales success rate is common and calculated by the number of sales divided by the number

of leads. This shows the sales effectiveness of converting leads to customers.

Selling refrigerators at a close rate of 15 percent can be compared to earlier records. This is how quotas are established and useful for learning what works. But a sales success rate does not transfer to premarket products.

Success is relative. Is a million-dollar product a success? Not by today's standards.

A million-dollar product (at retail) is not a million dollars in your pocket. If you license it, a 5 percent royalty on a product selling a million dollars at retail is \$25,000 in your pocket. (This is based on wholesale keystone.)

To make a million dollars with a license agreement at a 5 percent royalty, the product must sell \$20 million at wholesale—which means \$35 million (the discounters) to \$50 million (the specialty stores) at retail.

If you start a business to manufacture and market it yourself, it will likely be three to five years to profitability. If you are lucky, your profits may reach 15 percent before taxes and interest. Procter & Gamble's five-year profit is under 15 percent.

Projecting success for a new product is complicated. Success is different for every product, every industry and every business.

Selling 100,000 units per year of a novelty product is good; 100,000 units per week of a candy product is very bad. Mars produces 2,000,000 packages of M&Ms each day. "Only" 100,000 units per week would put it out of business.

There are many sophisticated metrics for established products like recurring monthly revenue, customer retention and customer acquisition cost. These help measure the success for complete products. Corporate metrics are not relevant for an inventor with a prototype.

Corporations commonly make several hundred samples, package them and show their top accounts in an effort to presell them. Selling it before they make it determines customer interest and demand.

6 types of product success

I define six different types of product success for inventors to visualize where their idea or product may fit. This is firsthand information for products we developed, licensed, or marketed.

Superstars are off-the-chart successful. My company never had a Superstar; wish we did.

They are disruptive, revolutionary and often innovative because they change lifestyle. It redefines how things work and affects other businesses and industries. You use and own Superstars: Consider the iPhone, PlayStation and electric vehicles.

A *Classic Product* is world recognized, a large revenue generator, and may be a true innovation. Often these are simple products that change the way we do the things we do.

The first baby monitor changed home monitoring and the pattern of parents' behavior while

minding the baby. It sold over \$360,000,000 in the first three years and held the leading market position. You probably own Classic Products.

A *Hit Product* has big sales that peak for a short time and sell millions of units—like the Fidget Spinner (2017), Bandai's Tamagotchi (1997) and Pogs (1994). Or sales could peak and then continue like the Pizzeria Pronto in Williams-Sonoma and PizzaQue in Walmart, which were the first pizza Bar-B-Q's and sold over \$100 million.

A *Product Success* has reorders, a pattern of sales and a long product life with predictable sales, maintaining a defensible market position. The Sharper Image Fast Track Tie Rack sold \$60 million over 14 years.

A mass market product must have predictable sales. Selling 20 products per month through Target's 1,948 stores would be 467,520 products per year; at \$10 per product, that's \$4,675,200 per year. That's a Product Success.

An *Item* will sell 20,000 to 50,000 units a year or more and make \$200,000 to \$5 million over the life of the product. It is a small but consistent success, with steady reorders, and may be one

Projecting success for a new product is complicated. Success is different for every product, every industry and every business.



Introducing the **CATERPEELER**



genuinefred.com

April Mitchell
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PRODUCT DEVELOPER FOR HIRE
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Hit your target



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of many Items in a line. Most products start as Items, and when volumes increase, they become a Product Success.

For example, the Stunt Streamer has been selling for 23 years, generated over \$3 million, and keeps selling. Items can be very profitable to individuals who want to do it all.

A *Trickle* will make a little money at a trickle sales rate. It may have a continuous flow of sales but not enough to grow the business or support it.

A Trickle product will make little money with painfully slow sales. It may have a small flow of orders, but the product is constantly on the edge of failure.

Big plan had a hitch

An inventor wanted a trailer hitch cover in the shape of a hand with posable fingers to form any hand signal. We developed it and licensed it to a small automotive after-market company, which made 500 to test.



Our research showed customers would pay \$19.95. The distributor wanted more, increasing it to sell at \$29.95. A critical marketing mistake priced it out of range, and it took four years to sell 500 units through catalogs and Amazon.

So, what kind of success do you have? Everyone wants to believe they have a Superstar, but understanding how to succeed with an Item can be a winning strategy. We have many clients with Items making an extra \$5,000 to \$70,000 per year.

It's not about gee-whiz numbers, hype or hopes. It's about a realistic understanding of the Product-Market Fit and a Go-To-Market Strategy.

Knowing where your product fits is key to getting it there. 📍

William Seidel is an author, educator, entrepreneur, innovator, and a court-approved expert witness on marketing innovation. In his career and as the owner of America Invents, he has developed, licensed, and marketed billions of dollars of products.



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ZOOM With a View

AUSTRALIAN'S CUSTOMIZED ANIMAL TRACKING SYSTEM PROVIDES A CLOSER LOOK AT NATURE'S MIRACLES **BY JEREMY LOSAW**

T ALL STARTED WITH PENGUINS.

Biologist Nikolai Liebsch was in the formative years of his profession when one of his lectures was taught by famed zoologist and penguin researcher Rory Wilson. The latter was putting tags on penguins to monitor their behavior, which resonated with Liebsch.

"Listening to his lectures, I thought, 'That is actually pretty cool stuff,' because it is the combination of biology and technology that I really liked," he said.

Liebsch's interest in biomechanics led to his working with Wilson to put sensors on the mouths of penguins and study their feeding habits. He was able to apply similar techniques to harbor seals for his PhD research.

These opportunities gave him the backbone in technology that became the CATS Diary product, designed to be the latest and best in animal monitoring.

Tracking times two

Liebsch and his team at CATS (Customized Animal Tracking Solutions) in Australia build custom tracking and video systems that allow film crews and researchers to bring animals' lives closer to us. For over a decade, CATS has been developing data tracking and video systems for use on wildlife, with a strong focus on marine animals.

CATS features two primary products: the CATS Diary, which logs data from a suite of sensors including

an accelerometer, and light and temperature sensors. The device is fully wireless and can take data up to 400 times a second.

The CATS Cam is the star of the show—a fully wireless, high-definition wildlife camera system that can be attached to a variety of marine animals to capture 4K video of their actions. The recording can be triggered by sensor inputs so the camera power can be used only for situations when the video is likely to be interesting.

Both the CATS Cam and Diary can be integrated into custom housings to suit the environmental and project goals for the device.

Technical challenges

The CATS system sits at the intersection of biology and engineering. The company was started by Liebsch and his now-retired partner, Dr. Peter Kraft. Both are trained biologists with a passion for tinkering and building things.

"We always liked tinkering, and have an interest for electronics and mechanics. Most biologists do not necessarily have that," Liebsch said.

Liebsch felt that video was important to add to the data already being gathered by his sensor systems. Initially, he was skeptical of video as a research tool because of the bulky and power-hungry nature of camera systems. However, it is the only way to see what the animal is doing from its perspective, and to rationalize the sensor data with observed phenomena.

The National Geographic Crittercam was being used for nature shows at the time but was not available as a research tool. Time-lapse cameras



Nikolai Liebsch (right) and his partner "always liked tinkering, and have an interest for electronics and mechanics. Most biologists do not necessarily have that."



were also available, but Liebsch saw an opportunity to turn video into a research tool.

The big technical hurdle was how best to make use of the limited power of a remote camera system and its batteries.

“A lot of the animals, the first time you see footage, it’s, of course, really exciting,” Liebsch said. “Then you realize that (a vast majority of the time, or) sometimes 90 percent of the time, they are just doing the same thing ... and it is a waste of energy for researchers.”

A whale sharks wow

The solution was to attach sensors like accelerometers and light sensors to the cameras to trigger them to record. This allows the battery power to be saved for when the camera had enough light for good video and when the animal was doing something interesting.

To test this concept, Liebsch and the team built prototypes by taking off-the-shelf action cameras and removing them from their housings. They added a bigger battery, connected them to trigger from the Diary sensor system, and put them in a waterproof housing.

In 2012, these first combination Diary and camera systems were installed on whale sharks at Ningaloo Reef off the Australian coast. The system gave the team incredible video of the sharks—a huge success.

This led to additional opportunities to improve and deploy the technology.

Liebsch eventually evolved the system to use his own camera system. This provided opportunities for customization. He also changed the system to be fully wireless.

The original systems had physical connections to charge and download data. When wireless charging and data transfer became viable, the design was updated to accept the new tech. This allowed for the systems to be fully enclosed, which made them more durable, and gave researchers a better experience—even though charging and data transfer rates are slower.

He continued to work with researchers and with different species. Eventually, the CATS systems were deployed by the BBC film crew during the filming of *Blue Planet 2*. Much of the underwater footage for that series was from CATS cameras, which garnered the team an engineering Emmy Award in 2018.

At home in-house

Most of the CATS system is made in-house at Liebsch’s shop in Australia. The PCBs are made in China, but the machining of the floats, the assembly and waterproofing are all done in-house.

He has even been exploring 3D-printing different parts of the system. His is not a high-volume product and often requires customization for each application, so it makes sense for the manufacturing to be done in-house. 📷

Details: cats.is

Above left: The suction cup CATS Cam is a high-resolution, multi-sensor recorder capable of resolving fine-scale movement with the valuable addition of video recordings.

Above: The CATS Cam attaches sensors like accelerometers and light sensors to the cameras to trigger them to record, as on this tiger shark.

Make! And Make it Fun

THESE RESOURCES PUT THE WHIMSY AND WONDER INTO THE NECESSARY PROCESS OF PROTOTYPING **BY JEREMY LOSAW**

THE DIRTY little secret about prototyping in product development is that no one wants to build a prototype.

If people wanting a fully functional and successful product in the market could snap their fingers and make that happen without having to hot-glue, laser-cut or 3D-print anything to do it, they would. But prototyping for the purpose of development is a necessary evil.

Managers often fear it. Prototyping can be a quagmire, the place where projects get stuck in the mud—and sometimes, like the horse in “The NeverEnding Story,” never come out.

But that is a myopic view, just one side of the story.

Prototyping is part of the job, but that does not mean it cannot be fun. Sometimes, we want to be unchained from the goal-driven work of making a product real: just unleash our creative force and build just to build.

These four resources can bring whimsy and fun back into prototyping.

MakeON

This electronic building kit allows you to quickly build circuits using conductive tape. Unlike some

electronics, the pieces are nice and big, easy to use, and the conductive tape makes it easy to see what is going on and to learn while you build.

The system can be used to build code-free circuits. It also includes adaptors so that it can be used with popular microcontroller boards such as the Arduino, Microbit, or feather format boards. The instructions are language free to make it accessible to all ages, abilities and cultures.

The real magic is when it is used for an “Inventure”—a way to tell a story through the purposeful use of technology.

The MakeON hardware takes the complication out of the technology so you can focus on the story of what you are trying to accomplish.

Maybe you would do an Inventure to build a colony on Mars. You might build a settlement and imagine what that would look like. The MakeON hardware helps expand the thinking and the story telling.

MakeON provides maps that you can build on to support Inventions, or you can build your own.

I just did an Inventure with my 8-year-old daughter, Ivy, in which we wanted to build a city with a smart greenhouse and grocery store. We were immersed in building together for an hour and a half, built traffic lights and did some coding together. It was a joyful experience for both of us. *makeon.xyz*

Losaw's daughter Ivy creates an “Inventure” around smart agriculture using the MakeON system.



An electronic building kit, custom LEGO website, LED pixel art accessory and web platform coding aid are among the ways to enable our creative force.

Brickplicator

This website allows you to make custom LEGO kits from 3D scans. You can upload and scale your digital file to the size of the model you want to build. Then, similar to the software used for 3D printers, it slices the model into layers before outputting a layer-by-layer build plan for you so you can make whatever you can scan or find in a 3D model.

There is also an option to create a LEGO mosaic from a picture file. Take your favorite vacation photo and turn it into a beautiful LEGO creation! You can even buy the full kit of bricks if you do not have enough in your personal stash.

It is cliché to meet engineers and designers who tell you they spent most of their childhood building things

out of LEGO. Brickplicator takes our beloved bricks and gives us the chance to be even more creative and personal with what we build.

I scanned a bust of Abraham Lincoln a few years ago, put it through the Brickplicator software, and will be building my own soon.

brickplicator.com

imagi

The imagiCharm is an LED pixel art accessory that brings fashion and fun to coding. The charm can be custom programmed with unique patterns, images, or animations to jazz up your key ring or backpack, or worn as a piece of tech jewelry.

Typically, the look and feel of prototyping and the tools used to build things tend to have a more masculine and cold feel—which can be an impediment for women, girls, and non-masculine people to engage with prototyping and innovation. imagiCharm brings a softer feel to tech that is more engaging and prettier. It can be programmed with its app, which

has gamified challenges, or can be coded with Python for kids and adults to have fun while leveling up their coding skills. *imagilabs.com*

MakeCode

Coding can be intimidating. The big walls of text can look like a bunch of gibberish. MakeCode is a web platform that uses a visual block coding technique that is easier to understand and fun to do.

The platform has modules for building video games as well as programming hardware, and a visual interface that makes coding fun, engaging and easy. My favorite feature is MakeCode Arcade, where you can build your own retro-style video games.

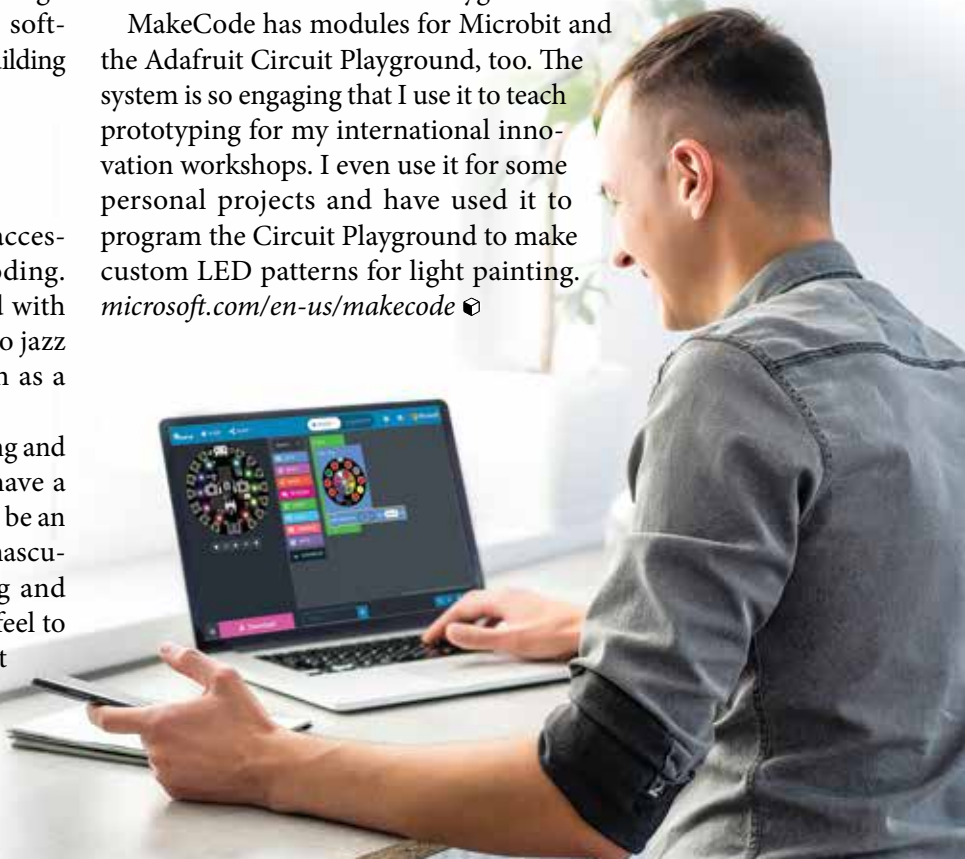
Tutorials allow you to build different types of games and learn the fundamentals of game building like sprites and spawning. The tutorials are built like a video game map, so it also feels like you are playing a game while learning. Once you are done, the games can be played immediately on your computer or downloaded to hardware like the Adafruit Pygamer.

MakeCode has modules for Microbit and the Adafruit Circuit Playground, too. The system is so engaging that I use it to teach prototyping for my international innovation workshops. I even use it for some personal projects and have used it to program the Circuit Playground to make custom LED patterns for light painting. *microsoft.com/en-us/makecode* 📺



The imagiCharm is an LED pixel art accessory that brings fashion and fun to coding.

MakeCode is a web platform that uses a visual block coding technique that is easier to understand and fun to do.





Patent Quality Reigns

INDISPUTABLE VALIDITY IN A HOSTILE ENVIRONMENT IS ONE OF THE FINDINGS AT NYC CONFERENCE **BY LOUIS CARBONNEAU**



THE SO-CALLED “BAD PATENTS” ARE GONE.

That’s one of our main takeaways from the recent IP Dealmakers Forum in New York City. Nowadays, there are so many ways to invalidate an issued patent that no one in his or her right mind would want to enforce those rights with anything but the highest-pedigree assets where indisputable validity, strong infringement theory and substantial damages must be assumed.

The flip side: A minuscule percentage (far less than 1 percent) can meet this very high bar, and the smallest blunder in drafting (e.g. “a” vs. “the” in a claim) or during prosecution can be fatal, leaving no margin for error.

Second, there is no shortage of money to transact these high-quality assets. The main problem is that a lot of this money is still sitting on the sideline waiting for the perfect match, which often proves elusive.

In a sense, there is an over-supply of money to buy patents or invest in their assertion but an under-supply of assets that meet this high bar. If this continues for too long, that money is going to be moved elsewhere and will likely not come back. Already, many litigation funders are diversifying outside the IP world.

On the other hand, insurance companies are now going beyond their traditional patent verdicts coverage and have found fertile ground for some new products—such as insuring the value of a portfolio itself. This allows patentees to find litigation funding more easily for a case or, more simply, non-dilutive IP backed lending.

CHINESE ASSERTIVENESS

It has often been said that China wants to move away from being an importer of Western technologies and become a developer of IP and exporter of homegrown advanced technologies. The country really did a great job at the importing part.

But it is also interesting to see how Chinese technology companies have adapted to the new landscape.

For instance, since Huawei has been barred from selling products in the United States and a few other countries for national security considerations, it has reinvented itself

as the most aggressive patent filer—and has now become an IP licensing powerhouse on par with the likes of Nokia and Ericsson. This has allowed it to also enter into multiple cross-licensing arrangements with other very large patent portfolio holders, as its latest deal with Japanese giant Sharp bears witness.

Meanwhile, Chinese companies—historically on the receiving end of patent lawsuits—have started flexing their own IP muscles outside of China.

Recently, Yangtze Memory Technologies Co. sued chipmaker

Micron for patent infringement, and so did Lenovo by filing suit against U.S.-based Asus. Pundits are divided as to whether this should be regarded as a sign that Chinese companies are now more interested in protecting their own technologies than “benefiting” from those of others—or that IP theft remains rampant, and they are just playing both sides of the equation.



Third, there was a real consensus that the U.S. legal environment is still not favorable to patent owners and that no one expects legislation in front of Congress (PREVAIL, Patent Eligibility Restoration Act) to fix this soon—especially during an election year where big lobbying budgets are deployed by those who oppose those bills.

Thus, patentees must pick their battles and fight where they stand a chance to have their day in court before too many years have passed. This means in either Texas or with the International Trade Commission if in the United States, before the Unitary Patent Court if in Europe (more on this below), or in some emerging countries such as Brazil, Colombia and India. 🌐

Louis Carbonneau is the founder and CEO of Tangible IP, a leading patent brokerage and strategic intellectual property firm. He has brokered the sale or license of 4,500-plus patents since 2011. He is also an attorney and adjunct professor who has been voted one of the world's leading IP strategists.



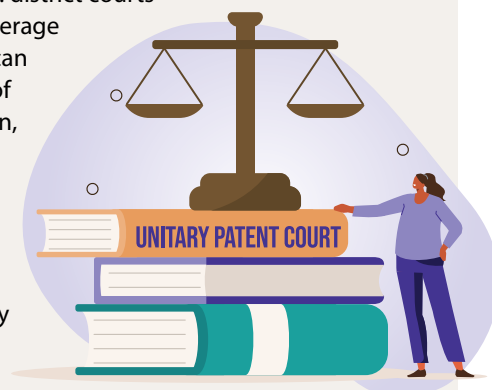
UPC OFF WITH A BANG

People have waited over 40 years for the Unitary Patent Court to become a reality, so expectations were high when the UPC went live last June. Those who supported this new forum for enforcing patent rights have not been disappointed thus far.

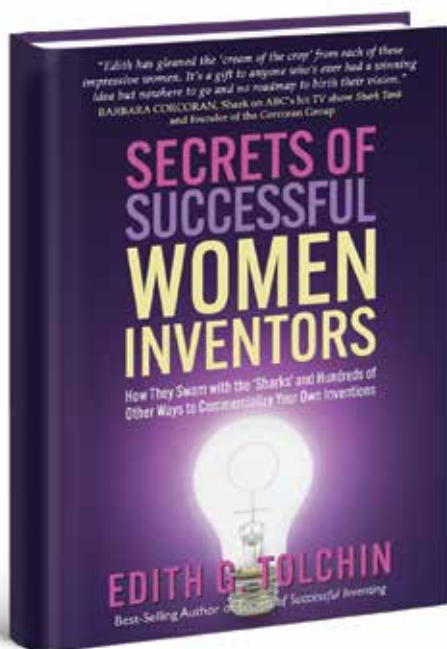
The speed at which the tribunal issues decisions has been nothing short of staggering.

This is not that surprising, given that it did not have any backlog to start with. Things will slow down eventually. But contrast this to most U.S. district courts that take 3-4 years on average to hear a case, and one can understand the appeal of having a swift disposition, win or lose.

According to statistics shared at the December IP Dealmakers Forum, the UPC had already heard 104 cases. Roughly half (49) dealt with patent infringement.



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Edith G. Tolchin knows inventors!

Edie has interviewed over 100 inventors for her longtime column in *Inventors Digest* (www.edietolchin.com/portfolio). She has held a prestigious U.S. customs broker license since 2002. She has written five books, including the best-selling *Secrets of Successful Inventing* (2015), and *Fanny on Fire*, a recent finalist in the Foreword Reviews INDIE Book Awards.

Edith G. Tolchin
(photo by Amy Goldstein Photography)

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Sign of the *Times*

NEWSPAPER COMPANY IS LATEST TO ACCUSE AI CHATBOTS OF PERVASIVE COPYRIGHT INFRINGEMENT **BY EILEEN MCDERMOTT**

All Eye on Washington stories originally appeared at IPWatchdog.com.

THE NEW YORK TIMES CO. is one of the latest complainants to accuse OpenAI's Large Language Model, ChatGPT, as well as Microsoft's GPT-4-powered Bing Chat, of widespread copyright infringement.

The *Times*' December 27 complaint alleged that Microsoft and OpenAI reproduce *Times* content verbatim and often attribute false information to the *Times*.

OpenAI has been sued by numerous creators and authors for training its chatbots on content found online, including non-public or copyright-protected content. For example, the *Times* included examples in its complaint in which prompts to ChatGPT asking it to reproduce paywalled content resulted in verbatim excerpts from the article in question.

The *Times*' complaint also highlights the phenomenon of AI "hallucinations," which

remain a major risk when it comes to Large Language Models.

In one example provided by the *Times*, Bing Chat "completely fabricated" a paragraph from a *Times* article by "including specific quotes attributed to Steve Forbes's daughter Moira Forbes, that appear nowhere in the *Times* article in question or anywhere else on the internet."

In another example of hallucinations, Bing Chat generated a list of heart-healthy foods based on a specific *New York Times* article, but the article in question did not even mention 12 of the 15 foods on the list.

The complaint included several other examples of hallucinations that resulted in fake article headlines about COVID-19 with non-working links, and a fabricated headline about the link between orange juice and non-Hodgkins lymphoma that was attributed to the *Times*.

Some reports have deemed the *Times*' suit more likely to succeed than others, based on

SCOTUS Keeps Us in the Dark

SUPREME COURT BAILS ON ANOTHER OPPORTUNITY TO CLARIFY PATENT ELIGIBILITY **BY EILEEN MCDERMOTT**

THE SUPREME COURT RECENTLY denied a petition asking it to clarify patent eligibility jurisprudence under Section 101 since its 2014 ruling in *Alice Corp. Pty Ltd. v. CLS Bank Int'l*.

Realtime Data LLC asked the court specifically to address the U.S. Court of Appeals for the Federal Circuit's (CAFC's) August 2023 decision holding 211 of its patent claims ineligible as abstract.

The underlying federal circuit ruling featured a stinging dissent by Judge Pauline Newman, who characterized current patent eligibility jurisprudence

as a "morass" and said she would have remanded the case for determination of validity under Section 112, or possibly Sections 102 and 103. But most of the panel affirmed a district court's dismissal of Realtime's patent claims after the court had in a previous ruling, and sent the case back to the district court asking for a more fleshed-out Section 101 analysis.

Realtime's seven patents describe "a system for data compression that looks beyond the file type descriptor, to



the underlying data, to complete the desired compression." The CAFC agreed with the district court that the claims were abstract, reasoning as follows:

"As the district court explained, none of the claims at issue specifies

the market harm the company is likely able to prove under the fourth fair use factor. The complaint details instances in which locked-down content is reproduced in its entirety for free, potentially diminishing the publication's subscriber base.

(*Editor's note:* Complainants involving alleged infringement by AI include Getty Images, comedian Sarah Silverman, and authors Paul Tremblay and Mona Awad.)



Self-inflicted wounds?

Ironically, noted *Bloomberg* columnist Noah Feldman in a recent op-ed, taking the *Times*' business away from it could ultimately backfire on companies like OpenAI and Microsoft:

"If you can get information more cheaply from an LLM than from the *New York Times*, you might drop your subscription. But if everyone did that, there would be no *New York Times* at all.

"Put another way, OpenAI and Microsoft need the *New York Times* and other news organizations to exist if they are to provide reliable news as part of their service. Rationally and economically, therefore, they ought to be obligated to pay for the information they are using."

The *Times* is ultimately seeking to hold the companies "responsible for the billions of dollars

in statutory and actual damages that they owe for the unlawful copying and use of the *Times*' uniquely valuable works."

In emailed statements to the press, OpenAI said it respects the rights of content owners and has been in talks with the *Times*, so was "surprised and disappointed" by the lawsuit.

In November, OpenAI announced that it will offer to pay for the costs customers incur from copyright lawsuits via its program, Copyright Shield. 🗳

Eileen McDermott is editor-in-chief at IPWatchdog.com. A veteran IP and legal journalist, Eileen has held editorial and managerial positions at several publications and industry organizations since she entered the field more than a decade ago.



any particular technique to carry out the compression of data—the particular rules for producing a smaller set of data out of a larger starting set. Rather, they all take the availability of compression techniques as a given and address the threshold matter of choosing to use one or more such available techniques."

Chorus of criticism

Newman criticized the federal circuit's expansion of the Supreme Court's judicial exceptions to patent eligibility, saying the case was "properly an enablement case" and that Section 101 "was never intended to bar categories of invention in this way."

The judicial exceptions are "an unnecessary and confusing creation

of the courts" and the current Section 101 law "has diverged from its historical purpose," Newman added.

Newman quoted herself, U.S. Rep. Doug Collins (R-Georgia) and Senators Thom Tillis (R-North Carolina) and Chris Coons (D-Delaware), who have all slammed the present patent eligibility law, to support her view.

"This case is another example that conforms with our flawed precedent," Newman concluded.

In its petition, Realtime argued this would have been the perfect case to address the abstract idea exception, arguing that it highlights the disagreement and confusion on the topic among federal circuit judges. The petition said:

"This case crystalizes the amorphous

nature of the judge-made abstract idea exception to Section 101. The numerous patent claims at issue in this case are directed to many different technological innovations for improving the functioning of computer systems and computer networks through novel uses of digital data compression technology, including combining known compression techniques in new ways to improve computer system functioning.

"The case came to the federal circuit twice, and the two panels did not even agree on what would be a fair characterization of what idea the claims were directed to, much less how to determine whether such an idea was an unpatentable abstract idea." 🗳



Target Market Tutorial

USE THESE SIMPLE STEPS AND QUESTIONS
TO MAKE THE RIGHT CONTACTS **BY DON DEBELAK**

TIPS FOR INVENTORS to start conversations with potential contacts in their target market:

Find your trade magazines. These are a special category and not generally available to the public. Bicycle Retailer & Industry News is an example of a trade magazine that targets component suppliers, bicycle manufacturers, bicycle retailers, distributors, sales agents and anyone else in the supply chain for bicycles. Find trade magazines through an internet search.

In addition to articles about industry news and new developments in the industry, trade magazines also publish a directory about once a year with everyone involved in each category, including manufacturers and sales organizations.

Inventors can also get a list of contacts at those companies from articles on industry news, and from news on who has been hired or promoted. Especially helpful is a section on new products or other offerings from companies where inventors can request information.

Find your trade shows. Trade magazines often sponsor industry trade shows, or at a minimum will list which trade shows are coming up. Inventors have a lot to gain by being an attendee (someone without a booth) prior to launching their invention.

Trade shows are not meant for the public, but typically you can attend if you state you are an inventor with a new product that you expect to launch in the next year. These shows are full of potential contacts for you, if you plan on introducing your idea, or if you plan on licensing it.

A few insider tips:

- Booths are typically not busy for the first hour of the show and the last 90 minutes. People at booths will often be happy to talk to you when they are not busy.
- Booths are typically not busy the last day of the show, so you can make contacts with exhibitors.
- Trade shows almost always have a welcoming reception the first evening of the show where you mingle with contacts and find people who might support you.
- Trade shows have large tables, seating eight to 10 people at their refreshment areas. When the show is busy, sit at those tables and talk to people.

Nurture your contacts. Once you have a promising contact, keep in touch every 3-4 months. You can do this with updates on your progress. Even with nothing to report, you should still send an email.

You can use the industry news to pick out an email topic. Examples might be “What do you

think of the new transmission product from X company,” or “What do you think of the sales agreement between X and Y companies?”

Know conversation points. New inventors may not have a ready list of questions or comments to start the conversation. Here are some.

- “Hi, I am the inventor of a bicycle product for pet owners and hope to launch my product next year at the show. I’m trying to get a better understanding of how the industry works and wondered if I could ask you a few questions.
 - “How long has your company been in business?
 - “How did your company start?
 - “Has your company had any recent new products?
 - “How does your company sell its products?
 - “Are there many inventor-led companies in the industry? Are there any that have started within the last five years?
 - “Are there leading companies in the bike accessory market, or is it dominated by distributors?
 - “What do you like best about the industry?
 - “Are there things about the industry you don’t like?
 - “Does the industry have a lot of new products?
 - “Do you feel this is a good time to be introducing a new product?
 - “Do you know of any products that were licensed by a company from an inventor?
- Then, ask questions that flow from your conversation. ☺

Visit Don’s Facebook page: facebook.com/onestopinventionshop

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



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Whether your concern is how to get started, what to do next, sources for services, or whom to trust, I will guide you. I have helped thousands of inventors with my written advice, including more than nineteen years as a columnist for *Inventors Digest* magazine. And now I will work directly with you by phone, e-mail, or regular mail. No big up-front fees. My signed confidentiality agreement is a standard part of our working relationship. For details, see my web page:

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Best wishes, Jack Lander

IoT Corner

MIT Professor **Hari Balakrishnan** was awarded the prestigious Marconi Prize for his work in vehicle telematics. The award is given annually by the Marconi Society for those who have contributed to digital inclusivity through information and communications technology.

The prize honors the memory of Italian Guglielmo Marconi, a Nobel Prize winner and the first to transmit messages across the Atlantic Ocean.



Balakrishnan's DriveWell platform uses Bluetooth-enabled sensors installed in cars, combined with machine learning to evaluate driver behavior and digital distraction. The system and devices are used by major insurance companies to reward safe driving and help reconstruct accidents for claims —*Jeremy Losaw*

Wunderkinds

Riley Fegely and **Leah Delmonico**, fifth-graders at Oley Valley Elementary School in Pennsylvania, took advantage of their school's shift from water fountains to water bottles and devised an invention that was to appear on "The Tonight Show Starring Jimmy Fallon." Because the bottles often fall off students' desks, they invented the Bottle Buddy—a device that attaches to the side of a desk and holds a water bottle and other small items. The invention advanced to the nationals in Michigan. The Fallon air date was pending.



What IS That?

It's a **toast night light**, by QANYI. But isn't toast associated with breakfast and mornings? If it helps, the light doubles as a mobile phone stand. And with a recently discounted price of \$14.99, it doesn't cost a lot of bread.

Get Busy!

Hit live-and-in-person **Artificial Intelligence Masters™ 2024**, presented by IPWatchdog and scheduled for March 4-6 at IPWatchdog Studios in Ashburn, Virginia. The second annual event will be led by "top thought leaders in the industry." ipwatchdog.com/artificial-intelligence-2024

WHAT DO YOU KNOW?

1 True or false: Steve Jobs (born February 24, 1955) hated rival Bill Gates.

2 Which technology has the most U.S. utility patents in the most recent data—semiconductor devices, or surgical stapling technology?

3 The National Inventors Hall of Fame was founded on February 11 of which year?
A) 1911 B) 1940 C) 1973 D) 1985

4 Pope Gelasius I is said to have technically invented Valentine's Day when he established The Feast of Saint Valentine in which year?

A) 496 AD B) 1124
C) 1287 D) 1514

5 True or false: The "Casablanca" movie song "As Time Goes By," copyrighted on February 23, 1943, was written 12 years earlier.



1. False. In fact, Gates wrote to Jobs when learning the latter was dying: "There was no peace to make. We were not at war. We made great products, and the competition was always a positive thing. There was no [cause for] forgiveness," Gates said. 2. Semiconductor, 6,263; surgical stapling, 2,151. 3. C. 4. A. The purpose was to honor a martyred saint. The love and candy and stuff came a lot later. 5. True. Herman Hupfeld wrote it. It was first recorded by Rudy Vallée in 1931.

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