

Patent Trial and Appeal Board

Education Clinic

Have you received a final office action from a patent examiner rejecting your patent application?

Has someone challenged your patent?

Are you considering challenging someone else's patent?

If you're in one of these scenarios and don't know what to do, consider signing up for the Patent Trial and Appeal Board (PTAB) Education Clinic, available monthly by appointment.

An experienced patent professional will meet with you one-on-one at no cost to answer questions about ex parte appeals and AIA (America Invents Act) proceedings, such as inter partes reviews (IPRs). During your appointment, you will learn more about:

- Options and the type of proceeding you are, or may be, involved with
- Free services and resources
- Where to find rules, laws, and online forms
- How the PTAB functions

Scan the QR code below to learn more and request an appointment.



Disclaimer: The discussions during these meetings are for educational purposes only. Volunteers will not give legal advice or offer subsequent representation.





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A Climate of Positive Change

USPTO honors global energy innovators with first Trademarks for Humanity awards, Patents for Humanity winners

From left to right: Vaishali Udupa, commissioner for patents, USPTO; Deven Young, World Centric; Walter Schurtenberger, **Hydrokinetic Energy** Corp.; Abe Schneider, Natel Energy; Daniel Apt, Olaunu, LLC; Kobby Osei-Kusi, Pirl Technology, Inc.; Horia "Orry" Faur, SPECMAT, Inc.; Brad Parks, Olaunu, LLC; Dr. Olamide "Ola" Ajala Inyang, Wind Harvest International, Inc.; Tom Cuthbert, Emrgy Inc.; Kathi Vidal, former director of the USPTO; Tsukasa Shudo, YKK AP America Inc.; Raymond Shelton, YKK AP America Inc.; Andrew Schwaab, Greenberg Traurig, LLP; Francisco Laboy, Genmoji LLC; Sharon Israel, chief policy officer and director for international affairs, USPTO.

f you think intellectual property (IP) "only" protects the rights of inventors and innovators, consider its prominent role in addressing environmental and climate change challenges.

That mission was celebrated recently when the USPTO announced the recipients of the 2024 Trademarks for Humanity and Patents for Humanity awards.

The four winners in the inaugural Trademarks for Humanity competition and eight Patents for Humanity awardees provide dramatic proof that humanitarian engagement is compatible with business interests and strong intellectual property protections, and that companies can effectively contribute to the global good while maintaining commercial markets.

The competitions highlight innovators and brand owners who find unique and creative ways to focus on sustainability and other environmentally friendly solutions.

Winners were recognized at a ceremony on December 3 in Washington, D.C., at the U.S. Department of Commerce.

"Both the Trademarks for Humanity and Patents for Humanity competitions celebrate the pivotal role that intellectual property plays in meeting some of society's greatest challenges," said Kathi Vidal, under secretary of commerce for intellectual property and director of the USPTO.

Trademarks for Humanity: Environment award recipients

Olaunu (San Clemente, California) provides stormwater water resources and coastal zone management consulting services to improve water quality in the ocean and waterways, also improving water resources and access to clean water while protecting the natural environment. Trademark: OLAUNU®

Genmoji (San Juan, Puerto Rico) develops, manufactures, and installs renewable energy and artificial wind energy recycling technologies and AI Software focused on sustainability, efficiency, and significant drops in greenhouse emissions for communities that face ongoing challenges with traditional energy infrastructure—particularly after major natural disasters. Trademark: GENMOJI®

World Centric (Rohnert Park, California) offers over 400 plant-based compostable products, including cutlery, plates, bowls, cups, trays, to-go containers, and lawn bags, designed to reduce environmental impact. The company donates 25 percent of its profits to grassroots





initiatives that empower communities and drive sustainable change. Trademark: World Centric®

ENERGFACADE by mark owner YKK AP America Inc. (Atlanta) has expanded its commitment to environmental sustainability in its external-facing products and its internal manufacturing processes. It provides energy-efficient aluminum building materials, including doors, windows, entrances, storefronts, sun shades, and curtainwalls. Trademark: ENERGFACADE®

Patents for Humanity: Green Energy award recipients

(by technology category)

Hydropower: Emrgy (Atlanta) developed a hydrokinetic technology through innovative hardware and software systems that enable distributed renewable power generation, transforming non-powered water conveyance infrastructure into clean energy sources.

Hydrokinetic Energy Corp. (Key West, Florida) developed hydrokinetic turbines for use in renewable sources with flowing water, including ocean, tidal, and river currents using a unique Flow Acceleration Technology.

Natel Energy (Alameda, California) developed FishSafe Restoration Hydro Turbines (RHT)— high-performance hydro-turbine runners that enable fish to pass through a turbine safely, preserving biodiversity while generating reliable, renewable energy.

Solar: SpecMat (Warren, Ohio) developed a technology called the Room Temperature Wet Chemistry Growth (RTWCG) process, which allows for solar cell production to be streamlined. It increases throughput by 40 percent, eliminates hot processes, uses less electricity, and delivers higher efficiency over traditional technologies.

Wind: Wind Harvest International, Inc. (Davis, California) developed new, utility-scale wind turbines to use in mid-level wind resources that are too turbulent for traditional horizontal axis wind turbines, including the understories of the windiest wind farms around the world and in other places the large turbines cannot go.

Hydrogen: ZeroAvia, Inc. (Hollister, California) developed scalable hydrogen and electric propulsion technologies to drastically reduce environmental harm and lower costs compared to traditional aviation powertrains.

Biofuels: University of South Florida: T2CE Biofuels (Tampa) developed a way to convert everyday waste material—such as household garbage, solid waste, agricultural waste, and sewage—into diesel, marine, and aviation fuel.

Other: Pirl (Rockville, Maryland) developed a next-generation EV charger that is comprised of easily accessible and removal internal parts to reduce the cost of maintenance while increasing uptime and generating less e-waste.

NEWS FLASH

MODRICKER TO LEAD NORTHERN NEW ENGLAND OFFICE: Daniel Modricker was appointed director of the USPTO's Northern New England Community Outreach Office, which will serve Vermont, New Hampshire, and Maine.

The office, temporarily located at the University of New Hampshire in Durham, will connect innovators with important government resources to assist them in their intellectual property (IP) journeys. The area has nearly 800-plus patent holders and 5,000-plus trademark registrants fueling local industries and economies.

PATENT, TRADEMARK FEE CHANGES: To ensure sufficient funding for its operations, enhance patent examination quality, and achieve patent pendency goals, USPTO patent fees will increase, effective January 19.

The undiscounted fee for filing, searching, and examining utility patent applications will rise from \$1,820 to \$2,000. The undiscounted fee for filing, searching, and examining design patent applications will increase from \$1,120 to \$1,300. The USPTO offers discounts for small and micro entities.

To provide the USPTO sufficient funding to effectively administer the U.S. trademark registration system and the ability to implement programs and initiatives driving its 2022-2006 Strategic Plan, trademark fee changes will take effect January 18. Many fees will increase by \$50–\$100 per class of goods and/or services.

For more information on the fee adjustments, visit **www.uspto.gov/ FeeSettingAndAdjusting**.

JOURNEYS OF INNOVATION

Grit in Full Supply

Founder of AR-AI software company for warehouses overcomes COVID supply-chain slowdown, myriad challenges by Jonathan make

n early 2020 as the coronavirus pandemic began its deadly spread, it wasn't looking good for a 20-something-year-old entrepreneur and her young company. At Charu Thomas' firm, then called Oculogx, orders suddenly stopped coming in for its software that powers augmented reality (AR) smart glasses worn by warehouse workers.

Oculogx was quickly running out of money; Thomas furloughed all her employees. Desperate

for a financial infusion that could save her company and its employees, she listed

every option she could think of to preserve cash, generate investments, and create new revenue.

Number one was getting a federal Paycheck Protection Program (PPP) grant. The program provided eligible entities with funds to help maintain their payroll, hire back employees who may have been laid off, and cover applicable overhead during the early parts

of COVID-19.

She sought to renegotiate deals with current customers for better payment terms, so Oculogx was paid upfront. She contacted would-be investors she had previously turned down.

Several items on her list came to fruition. Her tenacity to set a goal and work tirelessly began years earlier in a different battle of pluses and minuses.

In her early years of elementary school, Thomas got poor grades, especially in math. It took two years to improve her grades, but she was accepted into the gifted-talented program in fifth grade.

"There are a lot of examples like that throughout my life of something not going the way I wanted it to, necessarily. And typically, my response is to dive in and just put in hours until I can't [work] anymore," she said.

Thomas received a governor's scholarship in her home state of Georgia and was accepted to the Georgia Institute of Technology (Georgia Tech). The summer after her freshman year, she worked at Martin Brower, which calls itself "McDonald's largest supply chain partner worldwide."

Thomas built simulations of automated storage and retrieval systems, which get inventory in warehouses on the way to customers. These systems can cost millions of dollars and take years to deploy.

So she turned to artificial intelligence (AI), which she believed could speed up the process by giving warehouse workers more information through AR intelligence instead of relying on warehouse machinery and infrastructure. No equipment overhauls would be needed, just connected (or "smart") devices worn by employees on the warehouse floor.

Around the time she started Oculogx (now Ox) in May 2017, she began hearing about how patents protect new inventions.

Most impactful was her involvement in the Collegiate Inventors Competition (CIC), a program offered by the National Inventors Hall of Fame (NIHF) in partnership with the USPTO. The competition provides undergraduate and graduate students the opportunity to speak with patented inventors and industry experts. "I didn't really know much about the patenting process," she said.

She didn't win but did meet past NIHF inductees and got valuable feedback. The USPTO has since granted Thomas two patents. Ox also has two trademarks, one for its name and the other for the logo design of its namesake animal.

Today, Ox has 37 full-time-equivalent employees and raised more than \$16 million. She announced in November 2024 that she was becoming Ox's executive chairman, ceding the CEO title to a longtime employee.

Her ability to turn setbacks into success, combined with her invention mindset, help her capitalize on challenges.

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

Charu Thomas struggled in elementary school and math but eventually succeeded with hard work and grit. Years later, she started an augmented reality, artificial intelligence software business to make warehouses and the greater supply chain more efficient. Her participation in the **Collegiate Inventors** Competition taught her the importance of patents.

100 STRONG

Patent and Trademark Resource Center Program reaches historic milestone

burgeoning network that is a beacon of hope and information in libraries across America and its territories has reached one of many milestones to come: There are now more than 100 Patent and Trademark Resource Centers (PTRCs).

Since November 2024, the USPTO has designated Tuskegee University, the University of the Virgin Islands (UVI), Oregon State University, and Multnomah County Library in Portland, Oregon as the newest members of the PTRC program, crossing the triple-digit threshold. Both Tuskegee and UVI are Historically Black Colleges and Universities (HBCUs), bringing the number of HBCUs in the program to seven.

PTRCs play an instrumental role in advancing the innovation ecosystem by offering free assistance to current and aspiring inventors, innovators, and entre-

preneurs. Librarians explain concepts







related to patents, trademarks, copyrights, and trade secrets. They also assist creators in navigating relevant resources.

Each year, PTRCs assist thousands of aspiring inventors, creators, and small business owners on their innovation journeys, providing online resources, research consultations, and workshops to share information on the importance of intellectual property (IP) while tailoring their services to meet the needs of the community. Last year, PTRCs helped nearly 6,000 individuals through their programs.

Partnering with PTRC-designated libraries is one of many ways the USPTO facilitates IP protection for all innovators and entrepreneurs, contributing to the success of their ventures and communities. Find a

PTRC near you at www.uspto.gov/PTRC.

NEWS FLASH

10 TO BOOST INNOVATION

MISSION: The USPTO announced the appointment of 10 new members to its Council for Inclusive Innovation (CI2) on December 10, part of its action plan to implement the agency's

National Strategy for Inclusive Innovation and develop additional ideas for driving more U.S. innovation.

The new appointments are Tony Allen, president of Delaware State University; Liren Chen, president and CEO of InterDigital, Inc.; Rory Cooper, National Medal of Technology and Innovation Laureate and assistant vice chancellor for research, University of Pittsburgh; Hervé Hoppenot, president and CEO, Incyte; Christopher James, president and CEO, The National Center for American Indian Enterprise Development; Mae Jemison, founder of The Jemison Group, Inc.; Wendy Lea, cofounder and partner at TechHubNow!; Pamela Melroy, deputy administrator, NASA; Megan Smith, CEO and founder, shift?; and Grant Warner, executive director, Center for Black Entrepreneurship.

The national strategy aims to grow the economy, create quality jobs, and address global challenges by increasing participation in STEM, inventorship, and innovation among youth and those from historically underserved communities.

To learn more about CI2, visit https://bit.ly/3WttYyc.

WHAT'S NEXT

TRADEMARK BOOT CAMP RETURNS:

The first module in the free, virtual, eight-part Trademark Basics Boot Camp series will be January 7 from 2 to 3:30 p.m. ET. The module will cover the definitions and types of trademarks; benefits of federal registration; selecting

a trademark; filing and registration; and finding help. Please register by January 6. For details, visit www. uspto.gov/about-us/events/trademark-basics-boot-camp.



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

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A Wall of Honor And Celebration



On the day of the photoshoot for the *Inventors Digest* covers wall that is the main theme of our 40th anniversary issue, the heavens opened in downtown Charlotte.

Thanks, heavens.

ID art director Carrie Boyd and I were concerned that too much sunshine would make for a difficult shooting session at product development company Enventys Partners, given that the wall is in a corner stairwell where direct light streams in. The diminished light made Jeff Siner's job easier by reducing glare—although he would have mastered the assignment regardless.

Siner, a staff photographer with the *Charlotte Observer* for 36 years now, is a longtime friend who I met when

I was a writer/editor at the newspaper from 2004 to 2011. He is a heavily awarded presence who has twice been nominated by the paper for the Pulitzer Prize. His work has been published in *Sports Illustrated*, the *New York Times*, *Forbes* and *Ebony*, among other national publications.

The occasion was enthusiastic and festive. Siner and Boyd conferred about angles and technical aspects when he wasn't shooting on the stairwell.

Building maintenance supervisor Cristobal Benitez found a white backdrop from the building's photo studio and held it over the window with me as the camera clicked.

It was a fun and productive collaboration that embodies what happens in this magazine every month.

There was and is much to celebrate, following *Inventors Digest*'s recent website redesign and this latest milestone. This issue is a souvenir you can hold in your hands—the kind of tangible reward that only the printed product can bring.

So enjoy, right down to the inventing jokes we have sprinkled throughout. We are proud of our legacy of accomplishment, spirit and surprise, thanks to your support. There is much more ahead.

—Reid (reid.creager@inventorsdigest.com)

Inventors

EDITOR-IN-CHIEFREID CREAGER

ART DIRECTOR
CARRIE BOYD

CONTRIBUTORS

ELIZABETH BREEDLOVE
LOUIS CARBONNEAU
JACK LANDER
JEREMY LOSAW
EILEEN MCDERMOTT
APRIL MITCHELL
GENE QUINN
WILLIAM SEIDEL
EDIE TOLCHIN
LARRY UDELL

GRAPHIC DESIGNERJORGE ZEGARRA

INVENTORS DIGEST LLC

PUBLISHERLOUIS FOREMAN

WEBSITE ADMINISTRATOR MADI GRAVELINE

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Ad rates, subscriptions & editorial content:
520 Elliot Street
Charlotte, NC 28202
info@InventorsDigest.com
www.InventorsDigest.com
reid.creager@inventorsdigest.com



IP Groups Weigh In

ORGANIZATIONS ARE CLEAR ON WHAT THEY WANT, AND DON'T WANT, IN THE NEXT USPTO DIRECTOR

THIS JUST IN FROM AUSTRALIA: THE INVENTOR OF THE BOOMERANG GRENADE HAS DIED.

(Editor's note: On November 19, US Inventor—a nonprofit advocacy organization that supports independent inventors and small businesses—sent this release to media outlets regarding the rumored appointment of Vishal Amin as the next director of the USPTO. Amin is a U.S. attorney who was White House intellectual property enforcement coordinator during President Donald Trump's first term.)

THE PROPOSED appointment of Vishal Amin to head the U.S. Patent and Trademark Office (USPTO) would be detrimental to American innovation, economic growth, and national security.

As a central architect of the America Invents Act (AIA) of 2011, Amin has consistently prioritized the interests of big tech corporations over individual inventors and small businesses. Amin's policies have allowed foreign powers—particularly China—to gain a technological edge, undermining U.S. leadership in critical industries.

Amin's background as Intel's lobbyist-in-chief makes him unsuitable to lead the USPTO, an agency tasked with protecting American intellectual property. US Inventor President Randy Landreneau wrote: "President Trump can cause a renaissance in American innovation by ending the stranglehold of Big Tech on the U.S. Patent Office and unleashing American inventors and startups, much like George Washington did with the Patent Act of 1790. The opposite will happen if he appoints Big Tech ally Vishal Amin as USPTO director."

A December 11 letter to the president-elect by the Intellectual Property Owners Association recommended that the next USPTO director possess IP expertise; be a practicing IP attorney; have a minimum of 15 years' IP/patent experience; have five years' experience running a large organization; and have business-side knowledge of IP as well as policy and advocacy experience, among other recommendations.

CONTACT US

Letters:

Inventors Digest 520 Elliot Street Charlotte, NC 28202

Online:

Via inventorsdigest.com, comment below the Leave a Reply notation at the bottom of stories. Or, send emails or other inquiries to info@inventorsdigest.com.

AUTHENTIC VICTORY FOR PENN STATE

Penn State's football team lost in the Big Ten Championship Game (Oregon? In the Big Ten? Seriously?), but the university had scored a big victory a couple weeks earlier.

On November 20, a Pennsylvania jury awarded Penn State \$28,000 in damages in a trademark dispute regarding products made and sold by Vintage Brand and Sportswear Inc.

The ruling was an important win for the status quo in sports merchandising. UCLA, Purdue and Stanford are among the many other universities suing Vintage Brand on similar grounds. The Penn State case was the first to go to trial. Penn State accused Vintage Brand of selling "counterfeit" items, but the company said its website makes it clear it is not affiliated with the university.—Reid Creager

RIGHTIDEAS



CrunchCupPro

3-IN-ONE MODULAR TUMBLER thecrunchcup.com

This modular tumbler is a cereal cup, water bottle and thermos all in one. All lids fit on the same universal body for compatibility.

The cereal lid features a dual-chamber system to keep cereal and milk separate until they meet inside your mouth. Each chamber has a separate hole in the lid from which the contents are dispensed. The cereal lid closes with a magnetic snap.

The stainless-steel product comes in two main colorways, light and dark mode, with a variety of modular tops. If you prefer a clear container, you can add a highly durable Tritan outer bottle to your order. CrunchCupPro has a retail price of \$40.

HydroArtPod

SMART HYDROPONIC INDOOR GARDEN hydro-art-pod.com

HydroArtPod is an energy-efficient system that allows you to grow farm-fresh, chemical-free vegetables on your wall.

The food from the vegetable seeds, a one-time buy at \$749, is claimed to be ultimately less expensive than what it costs to buy vegetables from the grocery.

Ambient lights make HydroArtPod a centerpiece. Its high-efficiency, quiet, 2.7-gallon (10-liter) water tank pumps out water automatically (2 minutes every 2 hours) to keep plants hydrated throughout the day while saving energy.

The HydroArtPod consumes very little power (120 watts). It retails for \$1,299.





BEFORE THE INVENTION OF CROWBARS, CROWS HAD TO DRINK AT HOME.

QUENTIN

PLAY COLLECTIBLE WITH GAMING-INSPIRED DESIGN hihommi.com/products/quentin-play

From design visionary Karim Rashid, QUENTIN blends childhood nostalgia with art, industrial design and sci-fi culture with its gaming design that draws inspiration from classic joysticks and controllers.

Crafted from premium resin, it's a high-end collectible that comes in three sizes: 11 cm, 22 cm and 33 cm—and in various playful and contemporary designs. It weighs up to 3.5 kg, comes with a certificate of authenticity, and features a series stamp on the underside of each foot.

QUENTIN is available through Gadget Flow, a product discovery platform that keeps you up to date with the latest technology, gear and crowdfunding campaigns.

The collectible retails for \$200.

"You miss 100 percent of the shots you don't take." — WAYNE GRETZKY

Hanboost C1

ULTRASONIC CUTTER FOR DYI hanboost.com

Great for 3D printing lovers, prototyping engineers, model builders, leatherworkers, craftsmen, sculptors and hobbyists, the Hanboost cuts through most materials with precision at 40,000 vibrations per second.

The tool cuts materials that include PLA, plastic models, leather, PVC, paper, acrylic, rubber, gypsum, PCB and wood. Not just a blade, it is built with a premium transducer for high-efficiency energy conversion.

The cutter has a nearly 30-degree sharp blade tip for exact control over cutting depth and range, ideal for delicate models and small parts.

The Hanboost will retail for \$179. Shipping for crowdfunding backers is scheduled for February.



Forever Fingerprint

IT'S BEEN 4 DECADES SINCE A BRITISH GENETICIST'S DISCOVERY OF SOLVING CRIMES WITH DNA BYREID CREAGER

NNOVEMBER 6, 1987, Tommie Lee Andrews—accused of raping at least 24 women in Florida—was sentenced to 22 years in prison for rape, aggravated battery and burglary in a 1986 attack on an Orlando woman. In a trial involving another woman three months later, he was convicted again and then sentenced to serve more than 100 years combined for the two assaults.

It's unclear which events in Andrews' background, if any, might have led to his life of crime. Was he neglected? Abused? Raised with bad influences?

Maybe evil was in his DNA.

Regardless, what was in his DNA became part of forensic and criminal history.

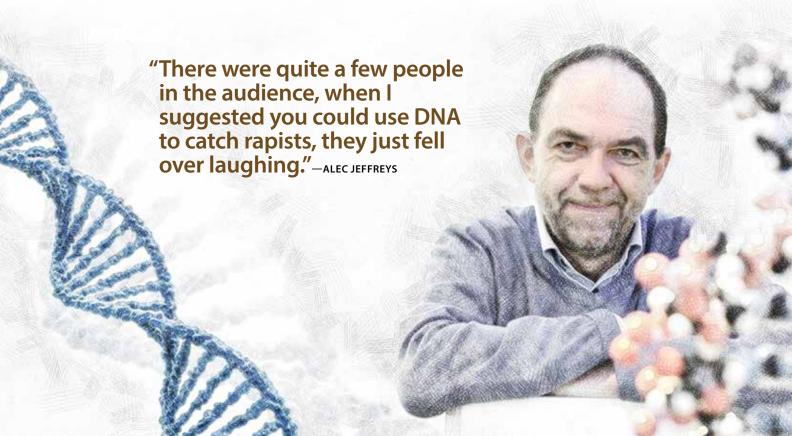
English precedent

The 1987 verdict marked the first time an American was convicted in a case involving DNA fingerprinting (also known as DNA typing, DNA profiling or genetic fingerprinting).

Nancy Hodge was unable to physically identify her assailant, but Andrews left partial fingerprint smudges on a windowsill, leading to police collecting a blood sample from him and a semen sample from Hodge. Laboratory tests isolated DNA from each sample, compared them and found a match.

Orange County, Florida officials had heard of the case of Colin Pitchfork, who earlier in 1987 was the first person in the world to be convicted of a crime using DNA profiling after raping and murdering two 15-year-old girls in Leicestershire, England, in 1983 and 1986. British officials utilized the process after the 1985 release of a paper led by geneticist and University of Leicestershire professor Alec Jeffreys, announcing his accidental discovery for DNA crime-solving the previous year.

Jeffreys noticed that certain sequences of highly variable DNA (Deoxyribonucleic acid) called minisatellites are repeated within genes, and





that each person has a unique pattern of minisatellites. The only exceptions are multiple individuals from one zygote, such as identical twins.

In a 2014 interview by the University of Leicestershire, Jeffreys said the first time he gave a talk on DNA fingerprinting at the Department of Genetics, "there were quite a few people in the audience, when I suggested you could use DNA to catch rapists, they just fell over laughing. They thought I completely lost my marbles."

Tracing trace history

Human beings are about 99.9 percent identical in their genetic makeup. It's the remaining 0.1 percent that differentiates us.

According to Britannica, the chemical DNA was first discovered in 1869, but its role in genetic inheritance was not demonstrated until 1943. In 1953, James Watson and Francis Crick, helped by biophysicists Rosalind Franklin and Maurice Wilkins, determined that the structure of DNA is a double-helix polymer: a spiral consisting of two DNA strands wound around each other.

This discovery spawned advances in scientists' understanding of DNA replication and hereditary control of cellular activities, which led to its role in determining paternity and accurately tracing family histories.

The intricate details of processes involved in DNA matching for crimes are for scientific journals, not Inventors Digest.

The site Biology Simple sums it up: By examining specific regions of DNA called variable number tandem repeats (VNTRs) or short tandem repeats (STRs), scientists can create a unique pattern for each person. That is then compared to samples collected from crime scenes or potential parents to determine the likelihood of a match.

Although TV shows may leave the impression that DNA results can be realized in a short amount of time, the truth is that it often takes weeks or months, depending on many technical variables.

DNA IS VIRTUALLY INFALLIBLE. NOT SO FOR THE JUSTICE SYSTEM.

The cases of Tommie Lee Andrews (below) and Colin Pitchfork (right) have morein common than being firsts. Both resulted in early prison releases that surprised and frightened the assailants' victims and the public.

Andrews, originally sentenced to 100-plus years, had that reduced to 24 years on appeal. In August 2021, Ninth Judicial Circuit Court of Florida Judge Leticia Marques set him free a month after a three-day bench trial in which the state's psychological experts failed to persuade her that he was not fit for release.



Nancy Hodge, the victim in Andrews' 1987 conviction, noted there were other cases with evidence against Andrews at the time. She said the state attorney dropped them, believing the 100-year sentence would hold up.

Pitchfork received a life sentence with a 30-year minimum in January 1988 for his two rapes and murders. That was reduced to 28 years on appeal. he was granted parole in 2021; sent back to

prison later that year for what was deemed suspicious behavior toward a woman; and paroled again in 2023. The parole board then decided not to release him after intervention from Lord Chancellor Alex Chalk.

DNA was also a major factor in one of the most famous murder cases in history. O.J. Simpson—charged with murdering his ex-wife and her male friend, and who tried to flee authorities in a freeway chase—was acquitted after his attorneys claimed there was cross-contamination of DNA samples. In civil court, Simpson was found liable for the deaths of Nicole Brown Simpson and Ron Goldman.

INVENTOR ARCHIVES: JANUARY

January 8, 1923: Joseph Weizenbaum, a computer scientist and pioneer in artificial intelligence, was born.

In 1965, the Berlin native invented ELIZA, a computer program that acted as a mechanical psychiatrist. He named it after the fictional character Eliza Doolittle.

Weizenbaum saw the program as a way to explore communication between humans and machines—only to find that some people claimed the program had human-like feelings. He refuted this, noting that the program was incapable of learning new patterns of speech or new words through interaction alone.

Principles of Inventing

5 DISCOVERIES FROM A QUARTER-CENTURY OF WRITING FOR INVENTORS DIGEST BY JACK LANDER

■ HIS IS to be my last column on inventing. I will continue to write for our magazine but on the subject of prototyping for inventors. Meanwhile, I'll summarize a few of the finer points I have discovered in writing for *Inventors* Digest this past quarter-century. These five statements may not be principles in the formal sense of the word, but they have been helpful to me. I hope they will help you.

1. Nearly all obvious problems are solved at the fundamental level.

Every solution has been thought of probably hundreds of times for major problems. Automotive engineers have solved problems, large and small—like the inevitable rattle of every 1960s-1970s car. My Toyota Camry is rattle-free; always has been, for eight years.

2. Opportunities for novelty mainly lie in the details.

Why do candy producers create paper or plastic enclosures so tough that we can't tear them open, even using our full strength and our teeth?

3. We need to know that our ideas aren't already solved.

> Always start on Amazon.com. Describe your annoyance or your invention, and



to determine whether a product is already on the market.

Amazon's level of detail is incredible. My bathroom exhaust/heater system broke down, and I was attempting to replace its fan motor. I lost one of the small rubber bushings on which the fan mounts.

I searched Amazon for a rubber washer assortment, and for about six dollars I promptly received an assortment of three sizes, neatly arranged in a compartmented plastic box. One such washer was perfect.

Or, go to a search engine and ask for the solution you think you have invented. You'll be amazed at the detailed explanations you'll receive—one of which may be too similar to yours to enable you to capitalize on your "invention."

What do you find missing or annoying about the explanation or solution the search engine has revealed? Can you find a unique solution that works better? Can you add a novel accessory?

- 4. If your retail market search reveals no solutions, do you own patent search. If that search reveals nothing, obtain a professional search and patentability opinion.
- **5.** Before paying for a search opinion or a patent, be sure you have an effective marketing plan. If you can't convince yourself that your invention-solution will sell, don't invest.

Those suggestions have worked very well for me over the years. They have made me admit <mark>th</mark>at all my great ideas are not as original as I had assumed. I'm sure they'll be helpful for you also.

A prototyping life

You may wonder about my background for my new assignment, writing about prototyping. A few facts:

Way back when I was about 2, my father, a pioneer radio repair person, brought home his

small leather bag full of resistors, condensers, com-quams (ground clamps), pliers, cutters, soldering iron and solder, and so on. Each evening, I proceeded to open the bag and remove all these mysterious items, examining each. Carefully.

So, I began my technical life with "expert knowledge" of electronic components.

When I was about 8 or 9, I overheard my mother complain about the weight of her castiron frying pan as she dispensed food from it. I crudely sketched an insert for the frying pan made of sheet metal with many holes for draining the cooking oil. It had a handle so that she could easily lift it out, with the food intact, and serve.

Nothing ever became of my idea, but Mom was grateful. That was enough reward for my first "invention."

I studied science in high school and went on to study mechanical engineering in college. Meanwhile, I built a number of small mechanical items—in a sense, prototypes.

During my engineering studies, I was working as a service engineer for photoelectric smoke measuring equipment made by a small company started by the inventor of the device, which measured the smoke being emitted from industrial smokestacks. (We had strict smokeemission laws in Chicago.)

The founder passed away before I was hired by his widow, and I became the only "engineer" (still in college) on the staff. I redesigned the electronics, in line with the then-current vacuum tube technology.

Next, I tackled complete mechanical redesign of the housing, light source and lens, updating the device's otherwise antique appearance.

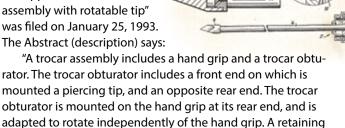
After a series of jobs in several companies designing or redesigning products—and obtaining several patents for my employers—I decided to start my own business. I received a large loan from a precision machinery dealer and obtained a hydraulic press brake, hydraulic shear, hand brake, and so on.

I was now the proud entrepreneur-owner of Shortrun Precision Fabricators in Laverne, California. My business was successful, and by the end of the third year I had four employees. Two were skilled sheet-metal mechanics.

Although I loved the "hands-on" laboroperating all the machines and creating



The application for "Trocar assembly with rotatable tip" was filed on January 25, 1993. The Abstract (description) says:



ably but securely received by a socket formed in the hand grip." **U.S. Patent No. 5,534,009**, granted on July 9, 1996, lists the inventor as Jack R. Lander.

head is mounted on the rear end of the obturator, and is rotat-

high-quality products for local companies—I longed to continue my mechanical engineering work. When I received an offer to buy my business, I reluctantly agreed to sell.

Qualifications abound

I relocated on the East Coast with a company that made surgical products. Gradually, I learned of top management's jealousy about new product ideas.

This is when, as I related in the October 2024 Inventors Digest, my department head assigned me to create the cosmetic appearance of a disposable laparoscopic surgical instrument that the company had just acquired from an inventor group. When I saw it was unsafe, I redesigned it on my own time and came up with a prototype overnight at the request of a company vice president.

The design passed testing and the device went into production—and though I received no bonus or promotion, the long-awaited field of disposable laparoscopic surgery had its beginning, in 1993.

I'm not concerned much with money. I love what I did and am doing; money is secondary. And I'm not eager for attribution or publicity.

So, now you have an idea of my background for a prototyping column. I'm sure we'll enjoy it. €

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.



8 Facebook **Content Ideas**

GET A FRESH START TO 2025 WITH CREATIVE APPROACHES FOR PROMOTING YOUR INVENTION BY ELIZABETH BREEDLOVE

F YOU'RE looking for fresh content strategies for marketing your invention on Facebook that will help you captivate your followers, tell your story, and grow your brand, consider these!

Share the story behind your Invention.

Why it works: People love stories—especially when they involve creativity, perseverance and the spark of innovation. Sharing your journey humanizes your brand and makes your followers feel invested in your success.

What to post: Share your "aha! moment" how you came up with the idea for your invention. Use a mix of text, photos and videos to make the story relatable and inspiring.

Talk about obstacles you faced during the development process and how you overcame them. Post about what inspired you to become an inventor and what drives you to keep innovating.

Pro tip: Consider using Facebook Live to tell your story in real time. This format encourages interaction and makes your audience feel like they're part of your journey.

Show the inventing process.

Why It works: People are fascinated by the "how" behind what they see. Sharing your process provides a behind-the-scenes look into your world and builds trust in your expertise.

What to post: Share photos or videos of your invention in its early stages. Highlight the tools and techniques you use.

Create time-lapse clips of you working on your invention. These are visually engaging and show progress in an exciting way.

Break down a small part of your process into an easy-to-follow guide.

Pro tip: Ask for input! For example, post two versions of a prototype and ask followers which one they prefer. This makes your audience feel involved in the invention process.

Celebrate milestones.

Why It works: Milestones are moments of pride that can inspire and motivate your followers. Sharing them demonstrates your growth and builds excitement around your journey.

What to post: Share the moment your invention is ready for the world.

Post about awards, patents or media coverage. Celebrate smaller wins, like completing a challenging design or hitting a crowdfunding target.

Pro tip: Create visually appealing graphics or videos to highlight these moments. Use graphic design tools like Canva to make professionallooking posts.

Educate your audience.

🕇 Why it works: Educational content positions you as an expert and provides value to your audience. People are likely to engage with content that teaches them something new; plus, they are more likely to return to you when they need more information.

What to post: Explain the science or technology behind your invention in simple terms.

Share practical advice related to your invention's niche. For example, if you invented a new gardening tool, offer gardening tips.

Address common misconceptions in your

Pro tip: Use infographics to make complex information more digestible and shareable.

Tap into User-Generated Content.

Why it works: UGC builds trust among your audience and fosters a sense of community. When followers see others enjoying your invention, they're more likely to want it for themselves.

What to post: Share reviews and feedback from people who have used your invention.

Ask followers to share how they use your product, and repost their content.

Host a contest in which followers submit photos of themselves with your invention or creative uses of your invention.

Pro tip: Always ask for permission before reposting user content, and give credit in your post.

Host live, interactive content.

Why it works: Interactive livestreams make your audience feel like heard, valued, active participants in your brand. They can also help you better understand your followers' interests and needs.

What to post: Answer questions about your invention, industry or journey as an inventor.

Use Facebook's poll feature to gather opinions or feedback.

Teach a skill or demonstrate your invention

Pro tip: Promote these sessions ahead of time to maximize participation. Encourage viewers to submit questions in advance.

Use humor and relatable content.

Why it works: Lighthearted content breaks up the monotony of promotional posts and makes your brand more approachable, interesting, and even shareable.

What to post: Create or share funny memes related to your niche or the inventor's life.

Post about common struggles or funny incidents in the invention process.

Share motivational quotes with a humorous twist.

Pro tip: Tailor your humor to your audience. Keep it relevant and tasteful.

Seek opportunities for collaboration and networking.

Why it works: Collaboration posts show that you're connected to others in your field, enhancing your credibility and reach.

What to post: Highlight fellow inventors, suppliers or collaborators.



Teach your audience. Celebrate with them. Be live and interactive, fun and identifiable. Max out networking opportunities.

Feature content from experts or influencers in your niche.

Share photos and videos from industry events, trade shows or networking meetups.

Pro tip: Tag collaborators in your posts to increase visibility and engagement. Other content creators are more likely to share your content when they are tagged in it!

As an inventor, your creativity is your greatest asset—not just in developing products but in engaging your audience. By combining storytelling, education, humor, collaboration and interaction, you can create a Facebook presence that captivates and inspires.

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.



It's a Go

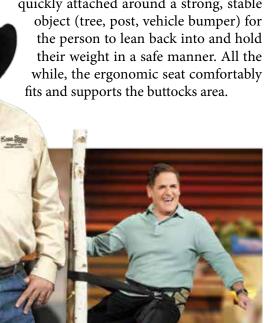
2 MEN'S ERGONOMICALLY FITTED, PACKABLE TOILET HARNESS SOLVES A PROBLEM FOR HUNTERS BY EDITH G. TOLCHIN

LTHOUGH I'LL never be a hunter—nor an outdoors person, for that matter—I love "Shark Tank" stories! Here's a new product for outdoors people with nowhere to "go," courtesy of Keith Lindsey and Robert Legg from Jacksonville, Texas.

Edith G. Tolchin (EGT): What is the Krapp Strapp and how does it work? Are there similar products on the market?

Keith Lindsey (KL): Krapp Strapp is the first ergonomically fitted, packable toilet harness on the market. It allows for a safer, more comfortable squatting toilet experience in remote environments. The adjustable waistband allows a person to wear the harness while allowing hands free to do other things.

The "Attachment Strapp" is designed to be quickly attached around a strong, stable



EGT: Tell us about yourself, your background, and your original company, Air Boss Motion Decoys.

KL: I am the operating partner and CEO of Air Boss Outdoors. I am a lifelong (over 50 years) adventurer, hunter and engineer. I started a professional career in 1980 as a tooling designer, then product engineer, product manager, and equity partner with other manufacturing-based startup businesses prior to retiring in 2019.

I have hunted, fished, camped and explored new ground since the mid-1970s. Enjoying the hunt more than the harvest has led to some insightful ways of looking at things over these years.

Hunting has always been a personal passion while earning a living in the manufacturing industry. I have amassed over 13 different utility patents and a couple of design patents over this time.

In 2021, Robert Legg (founder of Air Boss Outdoors) and I decided to make, manufacture, and sell motion-activated hunting decoys that provide consumer value yet truly attract the attention of the game being hunted. In 2023, we realized we needed to diversify the product line and develop and produce other outdoor-related products—not just motion decoys.

Hence in 2023, Air Boss Outdoors was formed, and it became "The Year of the Krapp Strapp."

EGT: Is it patented?

KL: The Krapp Strapp is patent pending and is being vetted through the utility patent process. Patent application was initiated in 2023.

The process of obtaining a utility patent is a very detailed and thought-provoking process—especially for the inventor and their attorney. We could only hope that personal interviews and a more open dialogue between the inventor/attorney and the patent examiner

Robert Legg (left) and Keith Lindsey (right) demonstrated the Krapp Strapp on "Shark Tank" (Season 15, Episode 6) with a delighted Mark Cuban, who said it felt "comfortable" and that "Bob, you're a star, buddy." Lori Greiner and **Daymond John** accepted a deal for \$65,000, with 33.3 percent equity.

"We try to identify ... notso-good experiences and develop a product that will turn a bad thing into a good thing."—KEITH LINDSEY

could happen on a regular basis. It would probably provide for a more expeditious process for all involved.

EGT: How did your personal background lead to this product?

KL: My lifelong passion for all types of exploratory hunting experiences and growing up in an area of east Texas where it was seven miles to the closest retail store of any type make for an outdoor lifestyle.

With a degree in mechanical engineering technology and working for over 30 years in the design, development and manufacture of medical devices, this constantly presented a Jekyll and Hyde situation where you work to earn a living doing something you're good at, vs. coming home and being passionate about something completely different. This always created an identity crisis of sorts.

As avid outdoorsmen, both Bob and I share lots of experiences—some good, some not so good. We try to identify those not-so-good experiences and develop a product that will turn a bad thing into a good thing. Eventually, that product will become a necessity instead of just another accessory.

EGT: Did it take long for the "perfect" prototype?

KL: The initial Krapp Strapp prototype was drawn and cut out of paper, adjusting for form/ fit along the way. The first sewn prototype only had two adjustment/dimensional changes, and we were in production of the first 50 within less than two weeks.



EGT: Did you negotiate a deal on "Shark Tank"?

KL: We did negotiate a deal with two of the five "Sharks" in Season 15, and it aired on ABC nationwide in episode number six. Both Daymond John and Lori Griener joined the Krapp Strapp team of Keith Lindsey and Bob Legg.

The entire experience was great from both a personal and professional perspective. "One of the best product presentations ever," the show producers told us after the taping.

EGT: Have you done any other crowdfunding?

KL: We haven't entertained any other sources of funding outside of "Shark Tank." We are and have been 100 percent self-funded from Day 1, with no debt whatsoever.

EGT: Do you have different styles and colors? A ladies' version?

KL: We all know that no self-respecting woman is going to "do the deuce" outdoors, but she will probably take a tinkle if it gets bad. We introduced the Tinkle Strapp on the "Shark Tank" episode for the ladies. It's bright pink and comes in an attractive purple storage bag.

But the newest model hitting the markets is the "GoPotty" Strapp! How many times have we heard our toddlers or little ones say, "Mama, I

According to Krapp Strapp co-creator Keith Lindsey, the product is the first ergonomically fitted, packable toilet harness on the market, allowing for a safer, more comfortable squatting toilet experience in remote environments.



The Tinkle Strapp, for girls

and women, was

introduced on

"Shark Tank."

got to go potty," while doing family outdoors or remote activities? The "GoPotty" is specifically sized to fit the smaller buttock area and has straps for adults to hold on to while the youngster learns to squat.

EGT: Your product is manufactured in Jacksonville.

Texas. Tell us about the facility.

KL: Our manufacturing facility is about 1,000 square feet. We employ mothers and grandmothers, all on flexible schedules so that they give priority to their families.

Yes, we do have to use some outside subcontractor sewing shops as volumes dictate. Everything we make and sell is made in America.

EGT: Where are you selling?

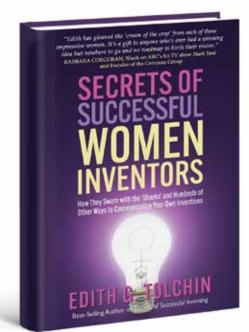
KL: One hundred percent of our 2023 and 2024 sales have been through e-commerce, shipping direct to consumers, through krappstrapp.com. We hope to get some of the privately owned regional hiking/camping/hunting sporting goods retailers on board soon.

EGT: Any recommendations for readers contemplating developing a hunting product? **KL:** Know your consumer and find a real need! **♦**

Details: info@airbossmotiondecoys.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/ fAGIvZJ) and "Secrets of Successful Inventing" (https://a.co/d/8dafJd6).

Endorsed by Barbara Corcoran of The Corcoran Group and "Shark Tank"...



"... A gift to anyone who's ever had a winning idea..." Read the compelling stories of 27 esteemed, hard-working women inventors and service providers, (many of whom have appeared on "Shark Tank"). All have navigated through obstacles to reach success and have worked hard to change the stats for women patent holders, currently at only about 13 percent of all patents. **HEAR US ROAR!**

Available for purchase at Amazon (https://tinyurl.com/334ntc3w), Barnes & Noble, edietolchin.com, and at squareonepublishers.com.



Edith G. Tolchin (photo by Amy Goldstein Photography)

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.

SQUAREONE

(ad designed by ioshwallace.com)

The Wild World of IP

ITS VARIOUS ITERATIONS AND USES, IMPACT ON WORLD ECONOMIES, AND HOW WE MONETIZE IT BY LARRY UDELL

■ **ROM MICKEY** and Minnie to almost every product we buy, intellectual property is a \$356 billion-a-year industry that can make its owners wealthy while adding a cost to the products and services we purchase every day.

But it's even more than that.

Intellectual property is a cornerstone of modern economies—driving innovation, protecting creators, and encouraging businesses to invest in new products and ideas. However, the world of IP is complex, with significant challenges in enforcement through the courts and elsewhere, balancing rights with public access, and adapting to new technologies.

As technology continues to advance and new global challenges emerge, the world of IP will continue to evolve, requiring thoughtful legislation and international cooperation.

A worldwide brush

IP encompasses creations of the mind such as inventions; literary and artistic works; designs; and symbols, names, images, computer code, etc. used in commerce. It is protected in law by, for example, patents, copyrights and trademarks, which enable people to earn recognition or financial benefit from what they invent or create.

By striking the right balance between the interests of innovators and the wider public interest, the IP system aims to foster an environment in which creativity and innovation can flourish. The World Intellectual Property Organization is the United Nations agency that serves the world's innovators and creators.

WIPO provides services that enable creators, innovators and entrepreneurs to protect and promote their IP across borders, also acting as a forum for addressing cutting-edge IP issues.

Licensing's prominent role

Some years ago, I served as a new venture consultant for WIPO. I traveled to Egypt, Bahrain and several countries in the Caribbean to meet with government officials, companies and universities, and to provide a series of lectures. I discovered untold opportunities in potential IP that were not being considered in startup launches.

In 1982, at the suggestion of U.S. Secretary of Commerce Malcolm Baldridge, I joined the Licensing Executives Society International (lesi.

org). LESI represents over 12,000 members in 97 countries. This prompted me, in 2000, to launch the Silicon Valley Chapter of the U.S.-based Licensing Executives Society—one of the best recognized worldwide.

The Silicon Valley Chapter has a diverse membership from corporate to attorneys, from universities to research labs.

Licensing has emerged particularly in the past few decades. These agreements are one of the most important ways businesses monetize their intellectual property, allowing them to generate revenue by allowing other companies to use their IP under specified conditions.

IP as a package commodity

Franchising is another way IP is monetized especially in industries such as fast food, retail and entertainment. In this process, the franchisee gains the right to use the franchisor's brand, trademarks and business model.

In some cases, IP is sold in auctions, particularly for patents. Companies looking to offload IP or buy access to valuable patents often participate in these auctions. They usually involve a portfolio of IP rather than a single patent. ♥

Larry Udell is executive director of the California Invention Center.and founder of the Licensing Executive Society, Silicon Valley Chapter. He is a teacher, lecturer and consultant who has created more than 35 corporations. He consults to Fortune 500 firms and smaller businesses.





Got You Covered

AS INVENTORS DIGEST CELEBRATES ITS 40TH ANNIVERSARY, OUR MONTHLY 'FACE' INVITES YOU TO AN ENDURING MISSION

BY REID CREAGER

A! MADE YOU LOOK. The wrapper on your favorite chocolate bar is always the same, and you already know what's inside. The packaging tells you, shows you, or both. There is no surprise once you open it (hopefully).

Not so with a magazine cover. Each one is or should be different. And even if you know the general, recurring theme of the content inside, specifics of said content vary from issue to issue.

"You never know what you're gonna get," to quote one rich, chocolate-related saying. All a unique, one-time occasion.

Inventors Digest turns 40 this spring while celebrating each of those monthly occasions and the opportunity they present: to make you look—and to stoke curiosity about what will happen when you open the cover.

This is a hallmark of the most famous magazines in history. Some of their covers have risen to the level of iconic for innovative photos or art that all but demanded surprise, emotion, curiosity and even outrage:

- A pained Muhammad Ali, riddled with arrows and standing in his boxing trunks on the April 1968 Esquire, with the understated headline "The Passion of Muhammad Ali" at the bottom wisely taking a backseat to the visual.
- A naked side view of John Lennon on the floor, curled up and kissing Yoko Ono on the January 22, 1981, cover of Rolling Stone a month after his assassination.
- A November 26, 1965, Life photograph of a Vietcong prisoner with his eyes and mouth taped shut, under the headline "The Blunt Reality of War in Vietnam."















































































































Inventors

















Editor/Publisher Joanne Hayes-Rines, holding the first issue of Inventors Digest (Spring 1985), was the face of the publication for 20 years. A tireless, "in-the-trenches" advocate for independent inventors and women, she fought against corporatefriendly legislation.

Covers have also succeeded with the stark impact of mere words and nothing else: Esquire in October 1966, large white text exploding from a black background with the punctuationindifferent, era-appropriate "Oh my God—we hit a little girl." (The story followed an infantry company from its training at Fort Dix to combat in Vietnam.)

ID doesn't have the popularity or resources of those famous magazines. But we do have

a substantial history as the longest-

running inventing publication, with an unwavering mission to educate, encourage and engage the independent inventor—who is the backbone of American creativity and prosperity.

> The stunning wall of 77 selected Inventors Digest covers dating back 30 years at Enventys Partners in Charlotte—overseen by the magazine's publisher, Enventys founder and

CEO Louis Foreman—celebrates our creativity and those covers' role as a gateway to the content inside. (Go to the newly revamped and streamlined inventorsdigest.com and click on Issues at the top of the homepage to view covers dating to August 2014.)

We have a lot of fun creating these covers, which can be splashy, dramatic, compellingly stark or JPG (Just Plain Goofy). The quality is such that with this publication, you can judge a book by its cover.

But mostly, it's all eyes on the mission.

Building the mission

For a long time, cover art was just a wish for Inventors Digest.

John Farady, founder and president of the Affiliated Inventors Foundation, created *ID* as an eight-page newsletter in spring 1985 after seeing a need to educate the public about the inventing and patent process. The first editor was Adrienne Walker.

It was an informative, if somewhat primitive product that reflected a technologically limited era. The newsletter was produced using cold type—meaning that when there was an error on the page, a printing employee would have to physically cut or remove that piece of type from the page before it was typeset.

Joanne Hayes-Rines, who took over as editor two years later and became publisher nine years later, has had the most tenure and impact in the magazine's history. She was the face of *Inventors* Digest from 1987 to 2007, during which time

MILESTONE DATES

Spring 1985:

First issue. John Farady, publisher; Adrienne Walker, editor.

March/April 1992:

Inventors Digest becomes the Official Publication of the United Inventors Association.

1998:

National Inventors Month is established by Inventors Digest, the United Inventors Association and the Academy of Applied Science. Originally celebrated every August, the occasion was switched to May in 2011.

Spring 1987:

Joanne Hayes-Rines becomes editor.

July/August 1994:

Hayes-Rines's first issue as publisher.

January 2007:

Mike Drummond named editor.

"Its mission remains as crucial as ever: to inspire, inform, and connect inventors while promoting the spirit of creativity that drives progress and entrepreneurship."

-LOUIS FOREMAN, PUBLISHER, INVENTORS DIGEST

her tireless and impassioned efforts for the independent editor included appearances at congressional hearings.

When she decided it was time to retire, she found an equally committed successor in Foreman. A multi-patent-holding force in product development who in 2023 was inducted into the Intellectual Property Hall of Fame, his volunteer, pro-inventor obligations include keynote speeches at major industry events and mentoring high school and college students.

His decision to erect the cover wall inside Enventys is tangible proof of his devotion not only to the magazine but the mission he has furthered. He is fiercely proud of Inventors Digest's accomplishments and this milestone especially in a digital era that has been the death knell for iconic printed publications ranging from Newsweek to Life to Playboy, all shuttered since ID's debut.

"In 2007, I decided to purchase Inventors Digest because I recognized its vital role in fostering a culture of innovation and empowering inventors through education and information," he said.

"As the magazine celebrates its 40th anniversary, its mission remains as crucial as ever: to inspire, inform, and connect inventors while promoting the spirit of creativity that drives progress and entrepreneurship. Keeping this publication thriving ensures that the voices and ideas of inventors continue to shape our future."

Exhibit A, B, C, D, E ...

November/December 1996: "We inventors hold these truths to be self-evident, that all 'smallentity' inventors are not created equal but are setup [sic] unfairly by their creator, the government. We herewith proclaim our national significance and importance, even our necessity. The servitude and indenture to big business and big government is over!"



January/February/March 2007:

Hayes-Rines's last issue as publisher. Sold magazine to Louis Foreman, product development and innovation expert who is founder of Enventys Partners.

January 2008:

Magazine becomes a monthly.

February 2012:

Mark Cantey's first issue as editor.

June 2015:

Cama McNamara's first issue as editor. June 2016:

Reid Creager's first issue as editor.

The nameplate for **Inventors Digest** has changed over the years—at right is the version that preceded the current one-but the mission to educate and encourage the independent inventor has remained the same for 40 years.

That small-inventor manifest, penned by then-tech marketing and development firm Chairman Harold A. Meyer III, celebrated the independent inventor's quest for pride and respect.

April 2009: "Finding a good invention service provider is tough. How do you find a pro? How do you pick? Often,

we must seek in specialized fields like patent law, licensing, industrial design, manufacturing, marketing or retail. In this quest, there are words to avoid saying, hearing, or even thinking: Idea. Free. Help. Huge. Fear. Greed."

Patrick Raymond, then executive director of the United Inventors Association, offered important cautionary advice on overused terminology that should not be part of an inventor's dialogue with others.

September/October 1997: "To the large, multinational corporations, changing [the patent system] to first to file was reform that would encourage innovation. To independent inventors, small businesses and universities, moving from first to invent was destruction of the lifeblood of America's economy."

Hayes-Rines, who frequently reported on



federal legislation from "the trenches," constantly warned how a first-to-file system would be a step backward for independent inventors. In 2011, four years after she sold the magazine, the America Invents Act adopted the first-to-file standard.

October 2014: "If you plan to license or sell your patented idea, then you should perform

due diligence in the selection of those companies that are candidates to assess where your new product idea fits with their existing products. Conducting research will provide evidence as to how your invention idea will fit in the marketplace, but businesses will often be interested in how your product will fit in with their business."

Marketing expert John Rau provided an experienced insider's take on a bigger-picture approach for inventors working with potential partners.

May/June 1998: "The virtual prototype starts out on a computer as a 3D outline drawing. Then, the outline drawing is filled in to produce a solid model. Next, the solid model is rendered or 'shaded' to produce an image that more closely resembles how our eyes see light gradations on real objects. Finally, the rendered 3D image is rotated on the computer screen as you are

TOP 20 HITS

Some celebrities who have appeared on the cover of Inventors Digest:



- · Ed Begley, Jr.
- Johnny Bench
- Mark Cuban
- Tessa Farrell
- Steve Greenberg
- Daymond John
- Bill Klein and Dr. Jennifer Arnold (TV's "The Little Couple")
- Jay Leno
- Ronnie Lott
- Niko Moon

- John Ratzenberger
- Sally Ride
- Cal Ripken, Jr.
- Maria Sharapova
- Rhonda Shear
- **Snoop Dogg**
- **Shawn Springs**
- Ben Stiller (a copy of Inventors Digest appeared in the movie "Night at the Museum: Battle of the Smithsonian")
- **Burt Ward**



viewing it. Rotation enables you to visualize the part from any angle."

The nuts and bolts of inventing's physical mechanics are a regular component of Inventors Digest's diverse information. Although tech evolution since 1998 has undoubtedly changed the steps written above, this process was state of the art at that time—and written by Jack Lander, who will return to writing about prototyping in the February 2025 ID.

Those blasts from the past reflect inspiration; common-sense caution; the latest on innovation-related legislation; insider strategies, and mechanics from patent-holding experts.

They are all common threads, tied together through the decades and holding tight.

Today's Inventors Digest moves along with 21st-century relevance and impact highlighted by our association with the United States Patent and Trademark Office and its monthly, fourpage Your USPTO section that updates the latest news and inspiration from America's foremost IP institution.

Other adds in recent years include Elizabeth Breedlove's Social Hour, on marketing through social media; William Seidel's Think Marketing, which discusses the latest trends and misconceptions involving this important component for monetizing your invention; April Mitchell's Meant to Invent, first-person narratives about the inventing process; and Louis Carbonneau's IP Market, which provides a global view of IP with an emphasis on the independent inventor.

All parts of the mission.

All eyes on the mission.

Happy trading

The towering brick wall overlooking the stairwell at Enventys Partners won't get any bigger.

As the months and years fly by and more "gotta-see" covers emerge, some tough internal decisions will be made about which covers have to be taken down in place of the newer ones. It's a pleasant problem to have.

Our decades-long commitment to inventor education and inspiration hung those striking covers on that wall. Your support of this mission hung those striking covers on that wall.

Join us in trading many more covers. €



THE COVER CHIEFS

Inventors Digest's professional and disruptive covers are largely a product of the technical and creative talents of art director Carrie Boyd and graphic designer Jorge Zegarra. They told us about their priorities, approaches and techniques.

Their work starts by searching for images with a sharp and strong focal point. The image must also be harmonious with other cover elements, such as typography, masthead and color palettes.

All elements of the cover are treated like a painting. The composition is tweaked through cropping, resizing, color adjustment, clarity and position to accentuate a clear visual hierarchy that allows readers to understand the message the editor wants to convey quickly.

Both Carrie and Jorge have 30 years' experience in the design field. Knowing an image's potential and what it would take to improve it is second nature to them. Jorge relies on his trusty digital Wacom tablet, a fantastic tool that allows him to "paint" the design with far more accuracy and ease than a standard computer setup.

Most important, they rely on each other's experience, input and suggestions to provide polish and improve the final design.

HE BUILT IT, AND THEY COME

Cristobal Benitez, building maintenance supervisor at Enventys Partners, built the Inventors Digest covers wall by affixing horizontal rows of shelving to a brick wall—spaced in such a way that the framed covers would fit snugly from top to bottom yet still have the maneuverability to be positioned evenly from left to right and interchangeable.

"Building the wall gave me the opportunity to express all the magazine covers on a different level," said Cristobal, who lives in Charlotte with his wife, Daisy, and children Sebastian, 11, and Emma, 4. "It was a lot of fun building it and seeing all the covers come together as one."

He knew he was the right person for the job because "I just turned 40."

GrowingThat Keeps Going

INVENTORS DIGEST COVERS REFLECT A CONTINUOUS COMMITMENT TO WOMEN IN IP

BY REID CREAGER

HE NATIONAL TV ad campaign launched in 1968, seemingly progressive at the time, lingers in fuzzy obscurity in internet video archives.

The jingle—accompanied by a beautiful, professionally dressed woman in tight curls and smoking a long, thin cigarette—celebrated its ground-breaking product but seemed a little tone-deaf even then:

You've come a long way, baby To get where you've got to [sic] today You've got your own cigarette now, baby You've come a long, long way.

Baby?

Claiming women's sole ownership of a product that can kill you, four years after the surgeon general's historic warning?

Grammar that wouldn't get past a fourth-grader?

We've come a long way since. An increasing number of women occupy major positions of title, influence and opportunity in the

past 57 years, but there's still a long way to go.

Rising with the tide

One such area of deficit, frequently reported in *Inventors Digest*, is the comparative lack of women patentholders around the world. A March 2024 report by the World Economic Forum listed that ratio at 17 percent of all patentees in 2022.

Reasons for this ongoing lag are often attributed to the gender gap in STEM. It's more like a gape: Women make up only 28 percent of the STEM (Science, Technology, Engineering and Mathematics) workforce as of 2023, according to MIT Professional Education.

During her 20-year tenure as editor and then publisher of Inventors Digest, Joanne Hayes-Rines was the face of powerful women in intellectual property. We remain committed to encouraging and inspiring women to make an impact in IP and inventing in the most public way—our magazine covers.

Among our past 103 covers, 44 have pictured or featured a girl or woman on the cover, usually prominently. (The September 2020 issue featured women and patenting as the cover package.) That's almost 44 percent of our covers.

Optimism and gratitude

Comments by some of those cover women serve as gratitude for our commitment, and encouragement for others.

Melissa Barker (January 2024), founder and CEO, Women Entrepreneurs Inc.: "Supporting women inventors is not just about equity; it's about unleashing untapped potential that drives innovation and economic growth. Women bring unique perspectives and solutions to the table, often addressing challenges that are overlooked.

"Our feature in Inventors Digest shines a spotlight on the creativity and resilience of





THE INVENTOR OF THE WIND-CHILL FACTOR HAS DIED. SHE WAS 86 BUT SAID SHE FELT LIKE 77.

women entrepreneurs, showcasing our role in supporting women through the power of community. By amplifying our voices and providing platforms for recognition, we pave the way for a more inclusive and dynamic future of invention and entrepreneurship.

"We are deeply grateful to Reid and his team for their unwavering commitment to celebrating and empowering female inventors. Their work inspires more women to pursue their creative visions and reminds us all of the transformative power of inclusive storytelling.

"Together, we can continue to break barriers and support a generation of women who are redefining the landscape of invention."

Lily Winnail (June 2016, May 2023), inventor of the Padalily: "Inventors Digest has been an invaluable resource on my journey as an inventor, offering practical guidance and a sense of community. Through its insightful articles and shared stories, the magazine brings to light the often-unseen struggles and victories inventors face. It has provided a place for me to share the highs and lows of my creative process.

"The magazine's mission of educating and supporting inventors through real-world stories, expert advice and shared knowledge has been crucial in helping me navigate challenges and celebrate milestones. I hope that by sharing my journey, I have been able to help and inspire fellow inventors, just as Inventors Digest has done for me."





Cara Brzezicki (July 2024), serial inventor and author: "I know that for a long time, women were not recognized as

> inventors. But magazines like Inventors Digest have highlighted so many women throughout the years.

"I love meeting likeminded people, and I cannot even tell you how many connections I have met because of Inventors Digest. From fellow inventors to coaching clients, this magazine has really moved my career forward.

"I look forward every month

to read about the new highlighted inventor and the many stories, which are truly golden nuggets."

Elizabeth Higbe Crouch (March 2019), inventor of The Cupcake Rack: "I love Inventors Digest!

"Inventors with ideas at all stages, from conception to sales, can all profit from the endless expertise shared by the skillful specialists who contribute their knowledge to this fantastic magazine. Where else can so much information be found?

"Louis Foreman's generosity and mentorship are priceless, and I cannot say enough about him." €

PROGRESS SPOTLIGHT

Edith G. Tolchin—who has written for Inventors Digest for a quarter-century, worked with inventors for 30 years and held a U.S. Customs broker license since 2002—is one of the foremost experts on female inventors in America. Her latest book, "Secrets of Successful Women Inventors," was released in 2023.

Edie does a monthly Inventor Spotlight Q&A in ID. Many of the subjects are women. Selected comments:

Inventors Digest works tirelessly to recognize and support women in the field of invention by providing them with a platform to showcase their groundbreaking ideas and accomplishments. Through in-depth features, resources and advocacy, the magazine plays an important role in empowering women inventors."

JOELLE FLYNN, co-CEO, Funkkoff!

Inventors Digest has consistently championed the voices of women inventors by showcasing our groundbreaking contributions and giving visibility to stories that often go untold. Seeing the stories of women like myself has been both inspiring and empowering, reinforcing the importance of diversity in innovation."

KENYA ADAMS, CEO, PantyBuddy

Congratulations to Inventors Digest on 40 incredible years of championing innovation and creativity! As a woman inventor in a male-dominated field, I'm honored to be associated with a publication that works tirelessly to amplify the voices of women in inventing."

LISA LANE, inventor of Rinseroo

Inventors Digest has served as a platform to amplify the stories of women in IP. Because of the many features and articles over the decades, including my own February 2024 cover story by Edith G. Tolchin, readers get to know the women behind their inventions and what inspired them."

MEGAN WOLFGRAM, founder and CEO, SwiftPaws

Over the years, *Inventors Digest* has been a strong advocate for women in the fields of innovation and intellectual property. The magazine has consistently featured inspiring stories and interviews with female inventors, highlighting their groundbreaking work and contributions to various industries. Inventors Digest not only celebrates the achievements of women but fosters a supportive community that encourages more women to pursue innovation and protect their intellectual property.""

KELLEY HIGNEY, founder and CEO, Bug Bite Thing

When I first had the idea [for my invention], I started actively reading Inventors Digest. It was truly inspiring to me and motivation for the ups and downs that being an inventor and entrepreneur can throw your way."

LINDSEY VALIULIS FLEISCHHAUER, cofounder, Totes Babies

Inventors Digest highlights women-helping-women moments that provide the recognition female entrepreneurs so richly deserve. By sharing scores of female-centered motivational stories, the magazine encourages women to form viable businesses that improve the national economy."

CAROLYN FAVORITO, intellectual property attorney



nventions designed to clean the ocean, break down plastics and reduce the risk of car theft were the winning entries in this year's "Why Didn't I Think of That?' competition, hosted by the Intellectual Property Owners Education Foundation.

Christopher and Nicholas K., 19-year-old twins from San Carlos, California; Tarun B., a 10th-grader from Powell, Ohio, and Ava-Elizabeth B., a seventh-grader from Ravenna, Ohio, were honored at an awards ceremony in Washington, D.C., on December 12. (Last names were omitted to protect privacy.)

The IPOEF will celebrate the students for protecting what they have created and recognizing the importance of intellectual property protection.

Students entered the competition in one of three agebased categories. Following judging from a review board of executives from companies and law firms with expertise in intellectual property, business strategy and innovation, 11 finalists from across the country were selected. The four winners were selected after online voting.

Tarun's invention was Trident: (Advancing Sustainability with Refined Catalytic Plastic Pyrolysis Devices) in the 13 to 15-year-old category. It was invented to break down plastics by utilizing multiple novel methodologies to increase the efficiency of petrochemical yield.

Christopher and Nicholas K. developed the Chaeto Biofilter—a sustainable, direct and cost-effective solution to ocean acidification. They invented chaeto biofilters to implement a novel strain of algae in marine ecosystems.

Ava-Elizabeth B. created the OCT-D: Defense for Your Car, which can protect your vehicle and prevent unauthorized use or theft by using electrochromic film on the windshield in combination with remote access devices and multi-factor authentication. She was the sole winner of the 12-and-younger category.

The winners each received the opportunity to work with a mentor to learn more about the innovation process, including business and IP coaching. The mentors are Louis Foreman, founder and CEO of Enventys, an integrated product design and engineering firm; Elizabeth Scallon, director of incubation enablement at HP; and John Underfer, CPVA, president and chief client advocate at Worldwide IP Solutions.

"It is critical for our society to understand and to build appreciation for the value of intellectual property rights," Foreman said.

For contestants to be eligible, their invention must have been of the individual's own making and the inventors must have acquired intellectual property protection before age 18.

In addition to pursuing IP protection for their inventions, many of these students continued to innovate their inventions, pursuing career opportunities related to their inventions, or achieving economic success by marketing their inventions. ♥

Are You Game to Self-Publish?

CONSIDER THESE VARIABLES WHEN DETERMINING WHETHER TO LICENSE OR GO SOLO WITH YOUR INVENTION BY APRIL MITCHELL

o you have an idea for a game or one that is ready for production, and you aren't sure whether you want to license or selfpublish it?

If you're not into making games, that's OK. Have a read anyway, because this information can be applied to several industries.

When you license, the company you license with publishes the game and sells it. I have licensed several games. Family games. Party games. Light strategy games. Outdoor games.

But until now, I have not embarked on the journey of self-publishing a game: having it manufactured on my own by having professional artwork done, selecting a factory to print it, and then selling it for retail.

I have thought about self-publishing a game for a while and would like to learn more about the manufacturing process, taking

a game from idea to retail. As I

slowly make my way to selfpublishing a game this year, I'd like to share with you what I am learning—so you, too, may feel empowered to self-publish your game or invention.



Experts' checklist

I have always valued the importance of gaining wisdom and feedback from others who have experience with something that I do not. Experienced game designers who have self-published have different perspectives and possibilities I may not have considered.

Though I am a professional game designer and often think of some of these questions or similar questions, the questions below came up in a recent conversation with a game designer friend with self-publishing experience. They may get you thinking differently about your game or its makeup.

- Can these pieces or game components be made of cardboard or even playing cards, instead of the current material?
- How can you keep costs down while keeping the gameplay and experience the same?
- What is a special or unique way to package and/or market this game?
- How can it jump off the shelf or stop someone from scrolling online?
- What are the unique features it has, or something new or tactile it can come with, to set it apart from other games that may be similar?
- Think about who will be buying this game. Kids might think the theme is funny, but will Mom or Grandma buy the game with the current theme—and how can you appeal to them and not just the end user?
- Is the name of the game catchy, fun, or
- On which platforms do you plan on selling?

I narrowed down my game concepts to what I think are my top two best ideas to self-publish. This is based on reactions from other publishers, numerous playtests, and feedback from other game designers and friends in the industry with various experiences.

As I shared these top two ideas with a friend recently, showcasing the current sizzle videos, he suggested a "what if" idea to make the game easier to manufacture and less expensive to produce.

He said my product could be made into a card game, keeping the exact same gameplay and theme and if it does well with sales, a "deluxe" version with the tactile pieces/game components could be manufactured and sold.

I had never thought about the card game idea, but one of my game's great aspects is that it's very tactile and has a great table presence.

Think about the composition of your pieces, packaging and marketing, visual impact, unique features, sales platforms and more.

I had been stuck on the notion that the game had to have the original components I designed it with and have been using all along. This game was once licensed to a company, but the deal fell through when it could not find the correct game components.

My designer friend's suggestion to change the material to cards has made a big difference: There would be less safety testing; it would cost less to manufacture and ship; and the margin of cost of goods to retail would be much more profitable. A win on several accounts!

A game-changer

Having someone in your corner who is brave enough to share his or her thoughts and suggestions can make all the difference between a product failing or succeeding. My revised plan is not only doable but presents a more efficient, versatile and potentially profitable possibility.

Always seek help and feedback from those who've been where you are. It can change the trajectory of your product. •

April Mitchell of 4A's Creations, LLC is an inventor in the toys, games, party and housewares industries. She is a two-time patented inventor, product licensing expert and coach, and has been featured in several books and publications such as Forbes and Entrepreneur.







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These 'Mythtakes' Can Burn

BREAKING DOWN SIMPLE MISCONCEPTIONS THAT CAN MAKE YOUR PLAN BREAK DOWN BY WILLIAM SEIDEL

Y EARS BURN from what I hear every day that is incomplete or simply not true. "I have a million-dollar idea!"

"All I need is money!"

"If I can get it in stores, I know it will sell!"

Optimism and a positive attitude are encouraging, support perseverance and can be a driving force to accomplish great things. But myths influence people to believe "The world will beat a path to your door," and "If you build it, they will come," which are false.

The news media is very good at promoting isolated success stories that are the exception but not the rule. Don't fall victim to myths and popular opinions.

Simple notions, simply bad

"I have a million-dollar idea!"

There is no such thing. Ideas are worthless without action because there is nothing to show, test, or sell.

Ideas are floating in the ether, undefined and impossible to protect. It is a misnomer to believe an idea is a product.

And, a million-dollar product "ain't" what it used to be. If you license it at a 5 percent royalty and it sells a million dollars online direct to consumers, it would mean a royalty of \$50,000. At wholesale it would be about half, or \$25,000.

If you fund and manufacture it yourself and everything goes smoothly, you may see a net profit of \$75,000 to \$125,000, not including startup costs.

You have a million-dollar product when it made a million dollars last year.

"All I need is money!"

Funding is rarely the problem. In fact, there is more money looking for viable investment opportunities than there are viable products or businesses in which to invest.

It is common for business advisers to say, "Most startups fail for lack of funding." This is correct in part, because business failure means the inability to generate enough revenue to cover expenses.

However, the failure is usually a management problem such as incorrect pricing, poor execution, no product-market fit and a host of other reasons.

"If I can get it in stores, I know it will sell!"

How do you know? Do you have sales results, orders or reliable tests? Or is it a hope and a dream?

"Selling in" to stores is not the most important sale. Most important is the "sell-through," which is the reorder. The speed at which it sells through is the velocity or inventory turnover. This is the indicator of customer acceptance and success.

A low price is often the preferred path to create sell-through. However, a startup strategy of getting into a price war with better-financed and established competitors is not a war you can win.

Successful startups need to offer a different value, occupy a position the competition can't match, and provide an innovation when it's needed.

More wrong assumptions

"It's a great idea and companies are going to want it!"

Companies are most interested in profits, and to get more profits they need viable business opportunities. They want proven products with a history of sales and customer acceptance.

To the company, it is not the idea that is important. The ability to capture a share of the market, the size of the product category and the profit margin are important.



If you have a product concept in a \$10 million industry, it is too small to get the attention of the big players. If you have a moderate improvement for a billion-dollar product category, it will capture the attention of most companies.

"I can make more money if I manufacture it mvself."

You may make more revenue or income, but it may not be more profitable. Making more money is making more revenue, but that is different from profit.

The 5-year net profit from Procter & Gamble, the world's largest consumer goods company, is less than 15 percent of the revenue. This is after the costs of goods and operations are deducted. The bottom-line or net profit is after taxes and interest are deducted.

You must carry the startup costs. And for a new product, time to profitability can be three years or longer. Many products—including Rogaine, Dyson vacuums, Listerine and Bubble Wrap—took many years, even decades, to be profitable. Only after customer acceptance can profitability occur.

Similarly, many startups including Amazon, FedEx and Tesla made millions but for many years were not profitable.

Inventors tend to focus on the retail or wholesale price and overlook the startup costs, operations and marketing. Believing the revenue is money in your pocket is a major mistake.

"All I need is manufacturing."

People often come to me with 5,000 units manufactured, unsold and sitting in a warehouse. Because they didn't talk to their customers, it is likely the packaging is off-target, the price/cost is out of line and it is mispositioned.

Making a product without knowing the level of customer interest is a losing proposition. Smart companies talk to their customers and buyers to determine interest or even sell some in advance of making it.

It's not about the manufacturing. Thousands of companies can manufacture it.

What is the plan when your products are sitting in a warehouse? Who will market and distribute it?

Rarely do I speak to an inventor with a marketing budget and distribution plan. This is by far the largest cost to get the product to market. So manufacturing is not "all you need."

Last word

All you need is marketing! The business of the product is creating repeat business and value at a profit.

Good marketing can create sell-in and sellthrough. Money and success happen because of repeat sales and scalability, which occur when you have distribution.

When your marketing is working, you get distribution; the value increases; money appears, and your plan exceeds expectations.

Think Marketing! ♥

William Seidel is an author, educator, entrepreneur, innovator, and a courtapproved 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.



3D Printing's Golden Age

RECENT INNOVATIONS HAVE HELPED INVENTORS PROTOTYPE WITH BETTER EFFICIENCY, AND AFFORDABLY BY JEREMY LOSAW

■ **HE FIRST** 3D printer I bought was in ??. I did not know what to do with it. It was a Printrbot Plus—an open-source, desktop 3D printer sold as a kit of wood and metal parts. The motors and electronics had to be wired up and bolted into the printer.

Honestly, it was more fun to build than to use. Although I did build some prototypes with it, the most utility I got was building flower pots. Build times were long for my projects, the printer was finicky to keep level, and few materials were available.

Fortunately, we are now in a golden age of desktop 3D printing; the tech for the inventor has finally caught up with our imaginations.

The process is inexpensive, fast, and the materials have great properties. Here is what is new in desktop 3D printing that you can use for your next invention.

The Form Labs Form 4 is a high-performance, resin-based printer with ultra-fast print speeds and accessories that allow for easy cleaning of prints for about \$4,500-not outside the budget for many prototypers.



This is one of the biggest improvements in desktop 3D printing in the past half decade.

My original Printrbot ran at 80 millimeters per second. Today's modern FDM machines (3D printers that use spools of melted filament) run at closer to 600mm/s, so prints can finish

8-10 times faster—depending on the geometry of the part being printed. It is often feasible to run multiple itera-

> tions in a day, whereas you might only be able to get one per day a few years ago.

> > Although 3D printers generally have the same components that they did years ago,

manufacturers have made gains with the software that drives the printers. The increase in acceleration allows print heads to move more aggressively while maintaining print accuracy.

Multiple materials

Many current-model 3D printers can now print with multiple materials in a single print. This allows for both multi-color prints and/or multimaterials in the same print.

This is done by having multiple print heads in the printer that the software can toggle between during the job. Printers that have this technology have software that allows the user to easily assign different materials to different areas of the print—by layer, face, or body.

A useful application for this technology is print-in-place gear trains. The two most popular materials for FDM printing are PLA and PETG, which do not stick together. When they are used together in a geartrain, the teeth can slide past each other very well, so the gears can run freely.

Printing different colors can also be useful, as some designs benefit from having delineation of different parts or areas of the part that may be of interest.

Affordability

The price of 3D printing has come down substantially in recent years, especially relative to performance.

When I bought my Printrbot, it was \$800 for a kit and closer to \$1,200 for an assembled printer. Now there are a number of desktop FDM printers available for under \$300 from big online retailers.

High-end printer prices have also come down a lot; high-performance printers such as the Prusa MK4S and Bambu Lab X1C come in around \$1,000.





Filaments are also inexpensive, with many brands of filament in the \$15-25-per-kg range. With prices like this, baseball-sized prints only cost a few dollars.

Exotic materials

Desktop 3D printing is now supporting exotic materials in an unprecedented way.

Many printers are capable of printing fiberreinforced filaments. Bambu Labs printers, which support many carbon and glass fiber-infused resins, can print them accurately and quickly. Parts from these printers have been known to be run on NASCAR race cars right off the printer.

The Markforged also has fiber reinforcement capabilities.

In addition to having carbon fiber in their standard plastic Onyx material, Markforged printers are able to add carbon, glass and kevlar fiber layers directly into the body of the print. The result of these technologies is the ability to create incredibly strong parts that can be used in high-performance prototypes, or directly in final products.

The rise of resin

Most inventors are familiar with filament FDM style printing, but resin-based printers are on the rise—and more user friendly and affordable than ever.

Resin printers use light-cured liquids instead of filament as their print material. Where focused light hits the resin, it cures and hardens. The control of the print geometry is much better with these printers, which are capable of printing highly detailed parts.

Once available only to industry and professional product developers, many desktop resin printers are now available for the inventor. Small commodity resin printers are available for \$150-500.

For a more professional experience, the Form Labs Form 4 is a high-performance printer with ultra-fast print speeds and accessories that allow for easy cleaning of prints for about \$4,500—not outside the budget for many prototypers.

Note that filament prints can be pulled straight off the printer, but resin prints need some post processing. They need to be cleaned with alcohol and then given a post cure in a UV oven to give them full strength. So, it is a more involved but not difficult process. €

Jeremy Losaw is a Super Fab Lab Specialist at the University of North Carolina at Charlotte. He has run innovation training sessions all over the world.



The Prusa MK4S 3D Printer kit can print with up to five different materials in a single print when equipped with the optional "MMU3" Multi Material Upgrade.



Will Fairness Prevail?

BILL'S PASSAGE AND MOVE TO NEXT STEP GIVES SMALL INVENTORS HOPE FOR PROTECTING THEIR PATENTS BY LOUIS CARBONNEAU

ILL THE PREVAIL ACT finally ... prevail? The PREVAIL bill, championed by Sen. Chris Coons (D-Delaware), recently passed the Senate Judiciary Committee with a razor thin 11-10 vote. The legislation aims to reform the Patent Trial and Appeal Board by raising the standard for invalidating patents.

Currently, the PTAB can invalidate patents based on a relatively low "preponderance" standard, which allows administrative judges to easily overturn patent examiner decisions. The bill would require "clear and convincing evidence" to invalidate patent claims, mirroring federal court standards. The legislation is particularly focused on curbing what supporters see as abusive patent challenges by big tech companies.

Incremental progress should not be discarded at the altar of some purity test.

Data show that 18 of the top 20 PTAB challengers are from tech giants such as Apple, Google, Microsoft, Intel and Cisco, which are accused of using the system to undermine smaller innovative entities by forcing costly legal battles.

The bill, which next moves to a full committee vote, has garnered some momentum via

the bipartisan conduct of the IP subcommittee (Coons and North Carolina Republican Sen. Thom Tillis will likely trade places in January as chair and ranking member), and the fact that both parties seem willing to resist Big Tech's lobbying efforts to a certain degree. (For more background on how Big Tech plays the IP game, read the recent article in Forbes magazine: "IP Circle of Life Under Threat of Extinction by Giant Corporations.")

The proposed bill also garnered support from organizations such as the Small Business & Entrepreneurship Council, which is on record for strengthening patent protection, but the US Inventor advocacy group opposes it on grounds that it does too little to revamp the current situation.

Although it is true the bill is far from perfect and will not fix everything at once, it is a clear step in the right direction. Incremental progress should not be discarded at the altar of some purity test.

Should this legislation come to pass and invalidation rates at the PTAB fall in line with those with the courts (roughly 50 percent, instead of 80-85 percent), this would significantly alter the status quo in favor of patent holders who are getting a raw deal at the PTAB.

In turn, we are confident this would directly move patent valuations upward.

USPTO Director Intrigue ...

HE IMPORTANCE of who is going to be the next USPTO director cannot be understated.

That person sets the tone and the policy that will drive the agency's direction for the foreseeable future. We saw it under former Director Andrei Iancu, and how things reversed course under his successor.

One must remember that the USPTO director reports to the Department of Commerce secretary (the USPTO accounts for about 30 percent of the staff of the whole Commerce department). Thus, it is important to first assess who will be the next Commerce secretary, assuming that person is the one making the choice for Kathi Vidal's replacement.

The current selection by President-elect Trump is the CEO of investment firm Cantor Fitgerald, Howard W. Lutnick. Although Lutnick needs to be confirmed by the U.S. Senate, as with every other cabinet nomination, the consensus is that he will easily clear that hurdle because he is deemed competent and largely non-controversial for this Job.

More interestingly, and probably a first in this case: Lutnick is an inventor!

Yes, you read this right. And he is not only the accidental inventor who contributed some incremental idea in a group session and had to be named as co-inventor to satisfy the legal requirements. He is a very prolific inventor, with hundreds of patents to his name, mostly in the fintech area. (A quick patent search naming him as the inventor yields over 300 patents worldwide.)

No category of patents has been emasculated so blatantly by the death squad combo of PTAB and the 2014 Alice Supreme Court ruling as fintech inventions. So, it stands to reason that Lutnick not only believes in the importance of technological innovation and patent rights but has also undoubtedly been on the receiving end of many invalidation procedures. This leaves a mark, as every inventor knows.

His firm has also aggressively tried to enforce its patents in court, so Lutnick is surely aware by now how the deck in currently stacked in favor of defendants in any patent lawsuit. In short, he

understands how the IP game is currently played and enters this position far from blind to the struggles of protecting patent rights.

Therefore, one would naturally assume that he will try to attract a candidate that is in line with his own values and experience, which would bode well for inventors and potentially help move some bills faster by lending support from the Executive Branch.

This is why it is so surprising to hear a rumor that the name of Vishal Amin, presently chief of IP policy at Intel, has been floated as the next director.

Such a choice, if confirmed, would be the equivalent of putting the fox in charge of the henhouse, as Intel has been one of the most aggressive companies in the past decade in lobbying to water down patent rights in the United States and abroad.

At the same time, there is no guarantee that Lutnick will be the one selecting the next director; he may simply be told by the next White House who its choice is with no other input. This seems to be the Donald Trump model so far. Stay tuned! �

Howard Lutnick, the choice to be the next secretary of commerce, has a vast inventing background. Will he be the person who selects the next USPTO director?

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.



NOTABLE TRANSACTIONS

Dominion Harbor, which has been a regular acquirer of large swaths of patents in the past from Intellectual Ventures, purchased roughly 100 wireless communications patents at the end of October. It now owns close to 20,000 assets in its vast portfolio and boasts a 90 percent success rate in prelitigation licensing.

A major licensing transaction took place between **Adeia** (formerly Experi) and **Amazon**, whereby Amazon took a multi-year license to Adeia's video codec portfolio for an undisclosed amount. (Editor's note: A video codec is software adeia of hardware that compresses and decompresses digital video.)



Beware Patent Pitfalls

COMPLEX AND ARBITRARY RULES ARE AMONG THE REASONS TO RETAIN A PATENT PROFESSIONAL BY GENE OUINN

ANY OF the inventors I have worked with have either been first-timers or experienced inventors or engineers attempting to protect their invention for their company for the first time. I have found those who are serious are also capable of meaningfully participating in the preparation of their own patent applications.

These folks are motivated but do not know what to do, or exactly how to do it, and they are afraid to mess things up by trying to do something themselves that is over their head. This is not because they are not smart enough; it is because patent law is dense, unapproachable and very complicated.

As I always tell students, you could not—drunk and on a bet—come up with a more screwy patent system than the one in the United States. The rules are complex, and unnecessarily so, in many (if not most) situations.

Protect your appendix

The rules at times seem arbitrary, showing little evidence of an overall thoughtful consideration. It almost seems that some rules have been created to trip up users of the system. I don't believe that is how the rules were conceived, but it certainly is how they have evolved.

That being the case, should inventors go solo and try to protect their own inventions? NO! That would be similar to trying to remove your own appendix.

All too often, inventors feel that the assistance of a patent attorney is not necessary. That is not unfortunate for the patent attorney; rather, it is unfortunate for those who hold the belief—because invariably, those who represent themselves always get rights that are more narrow than they otherwise could have been. Sometimes they are so narrow that they are completely worthless from a commercialization perspective.

I have had the occasion to be contacted by independent inventors who did file their own nonprovisional patent applications. They frequently call me when they are facing a First Office Action that rejects all the patent claims they filed.

A First Office Action that rejects all claims is not uncommon, but these applications filed by individuals that I am asked to review usually have little or no useful discussion of the invention. That means there will be little or nothing anyone can do to help them achieve a patent.

Sometimes they understand they made a critical error, but usually they blame the patent examiner or a rigged patent system. The truth is, they didn't file an application that was legally adequate.

Full description is everything

Many pitfalls await to trip up the unwary.

First and foremost, those going it alone must never forget that the job of the patent examiner

is to examine what you present—not to help you obtain the broadest protection possible, or even protection that would be useful in a commercial sense.

On top of that, many things can be hopelessly compromised at the outset of the patent application process, which will make it impossible to be granted a patent of any kind. At the least, it will force you to file another patent application to correct the deficiencies.

Therefore, inventors need to appreciate that the first filing is an all-important, critical filing that must describe the invention and all variations with as much detail as possible. You must describe everything from the broad general invention to the most specific version of the invention and everything in between.

One of the most common mistakes I see is the inventor being unable to describe what he or she feels is the patentable feature and/or unique contribution the invention is making to the relevant technology field. This is why doing a patent search is essential.

Until you understand what is known, you have no way of knowing whether a patent is likely to be granted. You describe everything with equal importance when there are almost certainly specific features that deserve greater attention—because that is where the patentable invention resides.

Logic? Don't believe the hype

Frequently I hear from inventors claiming they have never seen anything like their invention on the market, so they know there is nothing that could stand in their way of obtaining a patent.

This may seem logical, but it is not true.

There are many reasons something may have been patented, or a variation that is too close for comfort may have been patented, and still the product not reach the market.

For example, many times independent inventors are granted a patent and then run out of money or lose interest, so the product never makes it to the market. Then when others come up with the invention themselves or learn of the now-defunct patent, they choose not to pursue it because without being able to protect the

invention with a patent as soon as the product comes to market, it will be copied by others if it is successful.

Due to the laws of nature, and the reality that there are only a finite number of solutions to any particular problem, every generation invents, or re-invents, many of the same things. This is why it is always wise to do a patent search to start the process.

I guarantee a patent search will uncover inventions that you did not know were out there. With over 12 million utility patents having been granted in the United States and millions of published patent applications in America alone, there is always something that can be found that at least relates in some ways to what has been invented.

The patent examiner's job is to examine what you present—not help you obtain the broadest protection possible.

Dream, but responsibly

The moral of the story is to be careful. Getting help from a trained patent professional is the best and safest way to proceed. If you do not have the funds available to seek competent professional advice, ask yourself whether you should be pursuing the patent path.

The path from invention to patent to commercial success can be long and expensive. I dream big myself, so I am not about to tell others not to follow their dreams and believe in themselves and their inventions, but it is best to go into the process understanding what lies ahead and move forward in a financially responsible way.

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



Reasons for Optimism

LEADING IP EXECUTIVE CITES POTENTIAL OF RESTORE ACT, CHOOSING TOP-NOTCH USPTO DIRECTOR BY GENE QUINN

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

NE OF the leading IP executives and investors in the world sees reasons to be excited about what 2025 can bring in the world of inventing and intellectual property.

In a December podcast interview on "IPWatchdog Unleashed," Brian Hinman cited the proposed RESTORE Act and selection of a new director of the United States Patent and Trademark Office as two hopeful possibilities.

Hinman has held senior executive positions at leading technology companies, such as IBM, Philips and Verizon. After spending more than six years as chief innovation officer for Aon, he is chief IP officer for Cote Capital—which works to find, fund and scale the next generation of technology companies with breakthrough innovations that can deliver greener, more sustainable, more efficient and effective manufacturing. This can lay the foundation for bringing advanced manufacturing back to America.

Hinman and I also discussed monetizing streams of revenue backed by intangible

assets. You can hear the full podcast by visiting "IPWatchdog Unleased" on Buzzsprout.

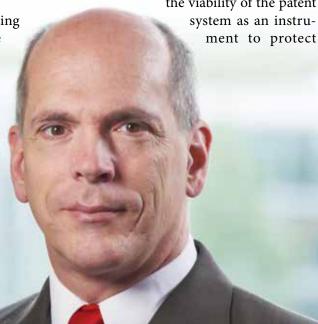
In exchange for an investment in the company, Hinman says his company receives a percentage of the company's revenue in the forms of an IP royalty that is paid quarterly. If there is an exit at some point, the investors get a percentage of that exit, but ownership of the company stays in the hands of the founders.

Real injunctive relief?

Hinman is bullish on pending pro-inventor legislation, particularly the RESTORE Act that would effectively overrule the 2006 Supreme Court eBay ruling and create a presumption that a permanent injunction is the proper remedy.

Hinman explained that the legislation places the burden on the alleged infringer to demonstrate that a permanent injunction is not warranted, which, he says, is the way it should be.

"I think this act is really going to restore the viability of the patent



"I think [the RESTORE Act] is really going to restore the viability of the patent system as an instrument to protect innovation, and hopefully facilitate the financing and monetization of technology transfer." —BRIAN HINMAN

innovation, and hopefully facilitate the financing and monetization of technology transfer," he said.

Big tech choice unlikely

He is also optimistic about the potential positive impacts of the next USPTO director, after Kathi Vidal left the position in December.

Hinman said it is important for President-elect Donald Trump to nominate someone who brings the innovator's perspectives—someone who has not only advised patent owners but has real familiarity with innovation and advising innovators.

Hinman said he doubts the appointment will be someone from big tech:

"Eighteen out of the top 20 petitioners challenging patents at the (Patent Trial and Appeal Board) are from big tech. So again, Apple, Samsung and Google and Microsoft, Intel and Cisco, they're among the top 10 most active challengers. So, it seems anyone who's closely associated with [the America Invents Act] that really created the P-TAB is not going to be the right choice. ...

"We need a patent attorney that's intimately familiar with at least some aspects of the patent system, whether that be through experience representing patent owners in trying to litigate the patents or patent challenges at the P-TAB, or somebody that really knows the patent acquisition system.

"We need somebody that really has advised patent owners and real innovators and is really going to encourage more innovation in areas like artificial intelligence. That should be a mandatory prerequisite." ♥



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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:

www.Inventor-mentor.com

Best wishes, Jack Lander

Another Punch in **Her Fight**

97-YEAR-OLD SUSPENDED JUDGE APPEALS JULY RULING THAT DISMISSED HER CASE BY EILEEN MCDERMOTT

■ USPENDED Judge Pauline Newman has appealed to the U.S. Court of Appeals for the District of Columbia Circuit involving the July 2024 dismissal of her case against the U.S. Court of Appeals for the Federal Circuit.

In that ruling, the district court dismissed the remaining counts in the challenge by Judge Newman, 97. She objected to Chief Judge Kimberly Moore's inquiry into Newman's fitness to continue serving as a federal appellate judge.

> Last February, the D.C. district court determined that most of Judge Newman's requested relief was

foreclosed by legal precedent limiting constitutional

challenges to the Judicial Conduct and Disability Act. However, the court said it maintained jurisdiction over three of the 11 counts, and part of another, and allowed the case to proceed on those counts. But the July decision sided with Moore on the remaining counts as well.



The opening appeal brief filed December 5 recounted Judge Newman's long and remarkable career in the intellectual property field and with the federal circuit, and points to her multiple evaluations by medical professionals who have attested to her superior cognitive ability.

The brief poses three questions to the court:

- Is an Act that authorizes suspensions of a duly confirmed Article III judge from all judicial duties unconstitutional?
- Do recurrent suspensions violate the Disability Act's (to the extent that it is constitutional) strictures that any suspension must be for "temporary basis [and] time certain"?

• Do federal courts have jurisdiction over "as applied" constitutional challenges to the Disability Act?"

It also notes that the complaint identified by Chief Judge Moore against Judge Newman was investigated by a Special Committee consisting of Moore herself and two other judges on the CAFC, making it "the first time in the history of the Disability Act that a complaint against a circuit judge which proceeded to the committee investigation stage was kept within the same circuit."

The brief explains that Newman refused to undergo the medical testing ordered by Moore due to Moore's "false allegations, refusal to transfer the matter, and failure to engage in any cooperative process with her."

'Unconstitutional campaign'

Newman's counsel, the New Civil Liberties Alliance (NCLA), said in a statement that Moore's actions amount to an "unconstitutional campaign that has functionally removed a sitting Article III judge from office."

The statement added that the Judicial Council has changed the rationale for pursuing the claims against Newman along the way. It noted that retired federal circuit Judge Paul Michel, in an article for IPWatchdog, condemned the federal circuit's actions and its effect on public trust in the federal judiciary.

Greg Dolin, senior litigation counsel at NCLA, said "the issues are more important than Judge Newman. At stake is the very independence of American judiciary and our system of checks and balances."

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.



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INVENTIVENESS



WHY WAS NIKOLA TESLA A FAN OF MARVEL? BECAUSE HE DIDN'T LIKE DC.

IoT Corner

Cellular IoT connections are expected to reach 217.7 million by 2028, growing at a compound annual growth rate of 10 percent from 147.9 million connections in 2023. This reflects the retail sector's increasing reliance on connected devices and smart technologies to enhance operations and customer experience.

According to a Retail IoT Applications Analysis report, the retail industry has a total addressable market exceeding 372 million devices—including point-of-service terminals, ATMs, vending machines, parking meters, digital signs and fare collection devices.

Wunderkinds

Tiffani Rai Gay of Apopka, Florida, a high school senior, won the \$1,500 special award at the 2024 National Oceanic Atmospheric Administration's Regeneration International Science and Engineering Fair—the world's largest international pre-college science competition. Tiffani invented an electromagnetic system capable of separating oil from water, crucial in oil spills. Earlier, she invented a process to help visually impaired people navigate using radar, instead of guide dogs or a cane.



The **Zen Garden Litter Box** is supposed to be a conversation starter for your desk, not a real litter box. The kit includes one 3-inch litter box tray, two 3/4-inch cats, one bag of sand, five decorative rocks and one 2-1/2-inch wooden rake. Hmmm ... less available desk space, for no apparent reason. Feel the calm!

Get Busy!

Cosmoprof North America 2025, January 21-23 at the Miami Beach Convention Center, is a trade show featuring the latest beauty brands, product innovations and distribution channels. Its last event attracted 1,200 exhibitors from 40 countries and 26,000-plus attendees from over 105 countries. Details: cosmoprofnorthamerica.com

WHAT DO YOU KNOW?

- Which product or invention concept did not debut in 1985, 40 years ago?
 - A) Microsoft Windows
 - B) The atomic force microscope
 - C) A practical lithium-ion battery
 - D) The cellphone
- True or false: When the short-lived New Coke debuted in 1985, Coca-Cola's market share for cola had shrunk to less than 24 percent.
- 3 As of January 1 of last year, which corporate behemoth's trademark value was highest— Microsoft, or Google?
- Ringo Starr's music publishing company, founded in 1968 to protect the former Beatles drummer's intellectual property, is called:
 - A) Shooting Starr **Productions**
 - B) Starkey Music
 - C) Starr Kissed
 - D) Startling Music

5 True or false: Inventors Digests Jack Lander has more patents True or false: Inventors Digest's than Elon Musk.



ANSWERS: 1. D. (1973). 2. True. 3. Microsoft, \$42.8 billion; Google, \$44.3 billion. 4. D. 5. False, but it's closer than you may think. According to Insights by Grey B, as of late August 2024 the man who said "Patents are for the weak" had 23 patents in his portfolio, belonging to eight unique patent families. Lander has 13.

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Whether you just came up with a great idea or are trying to get your invention to market, *Inventors Digest* is for you. Each month we cover the topics that take the mystery out of the invention process. From ideation to prototyping, and patent claims to product licensing, you'll find articles that pertain to your situation. Plus, *Inventors Digest* features inventor pros and novices, covering their stories of success and disappointment. Fill out the subscription form below to join the inventor community.





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