

Inventors

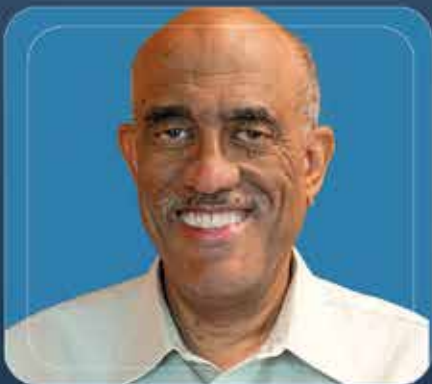
DIGEST



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- Receive invaluable information to assist with developing an IP strategy including sources for funding, testimonials from accomplished inventors and entrepreneurs, as well as government programs
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PATENT AND TRADEMARK OFFICE



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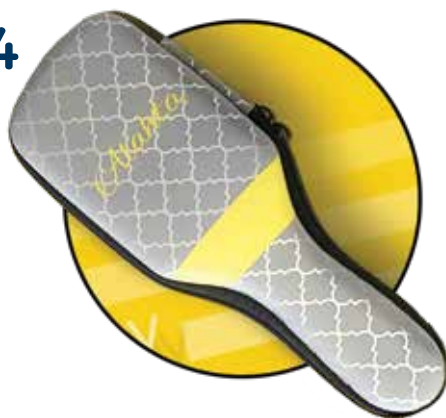
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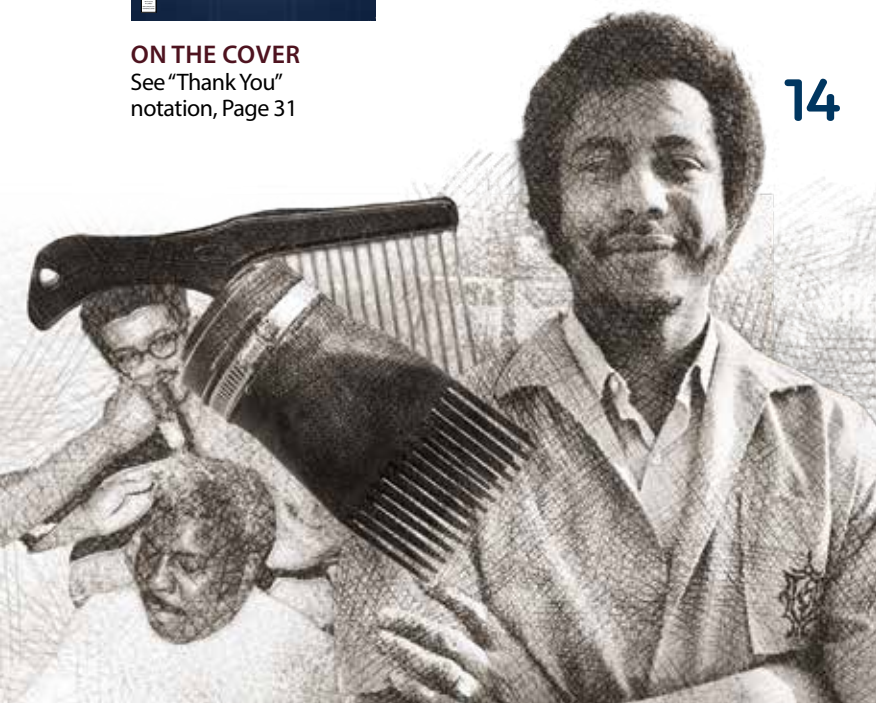
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ON THE COVER
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Give no quarter to Patent Pirates.

Or they'll take every
last penny.

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



SaveTheInventor.com

Patent Center Fully Replaces Public PAIR System

More user-friendly tool for electronic filing and management of applications was introduced in 2017

BY THE TIME YOU READ THIS, the USPTO will have fully transitioned to a faster, more streamlined search experience for applicants accessing publicly available patents and application file information.

Beginning August 1, 2022, the Patent Center system—available to the public since 2017—fully replaces the legacy Public Patent Application Information Retrieval (Public PAIR) tool for the electronic filing and management of patent applications.



The Public PAIR tool was first launched in the early 2000s.

In addition to providing improved system performance and a more intuitive user experience, Patent Center incorporates all the existing functions of Public PAIR, as well as several enhanced features that allow users to:

- Search publicly available information as a guest by application, patent, Patent Cooperation Treaty (PCT), publication, and/or international design registration number;
- Sort documents and transaction history based on column headings;
- Perform a quick document preview;
- Download multiple documents at once within a single PDF file or in a ZIP file (new);
- Download patent references (new);
- Download documents in DOCX and XML formats (new); and
- Download bibliographic information in XML format (new).

The USPTO is hosting several training sessions to further increase users' familiarity with Patent Center. To view the training schedule, register for a session, or learn more about the system, visit the Patent Center information webpage on the USPTO website at uspto.gov/patents/apply/patent-center.

The newer system has undergone rigorous user testing and iterative improvements, based largely on the public's input. The USPTO will continue to use feedback from stakeholder listening sessions, Patent Center training programs, and other events to further refine the system to meet users' needs.

If you have suggestions, please contact emod@uspto.gov.

NEWS FLASH

CANCER PILOT PROGRAM EXTENDED

To accelerate innovation in the health and medical fields, the USPTO published a Federal Register Notice announcing a further extension of its Cancer Immunotherapy Pilot Program. Petitions requesting participation in the pilot program that are compliant with the program's requirements and are filed on or before Sept. 30, 2022, will be accepted.

The USPTO first implemented the program on June 29, 2016, in support of the White House's National Cancer Moonshot initiative, which sought to accelerate cancer research. It permits patent applications pertaining to cancer immunotherapy to be advanced out of turn for examination and reviewed earlier (granted special status).

To date, over 835 petitions requesting participation have been filed, and 615 patents have been granted under the pilot. Various stakeholders from around the world—including independent inventors, universities, research institutions, hospitals, medical centers, government agencies, and large and small companies—have filed petitions to participate in the pilot program.

For more information, please see uspto.gov/patents/initiatives/patent-application-initiatives/patents-4-patients.



TRADING CARD

NO. 20 Ray Dolby

RAY DOLBY wasn't afraid of the unknown. He accepted it as a known fact of inventing. To be an inventor, he said, "you have to be willing to live with a sense of uncertainty, to work in this darkness and grope towards an answer, to put up with anxiety about whether there is an answer."

Such was the scientist's conundrum with background noise on analog tapes—a persistent flaw since the format's inception in Germany in the early 1930s. Quiet passages and full pauses during musical performances revealed a sound that could best be described as a snake poised to attack. Boo, hiss.

Dolby, who had led the development of the electronic aspects of the Ampex videotape recording system in the 1950s, solved the hiss problem with what became known as the Dolby noise reduction system. Dolby NR became standard on virtually all music cassette decks as that tape format exploded into popularity in the 1970s.

The Dolby B system was introduced for the consumer market in 1968. It boosts high-frequency, low-level signals during the recording process so they are at a higher magnetic level on the tape. Then the inverse of the process is applied on playback, lowering tape noise.

Dolby forever changed the way we listen to music—and how music was made. Movies, too.

Thousands of films and billions of products have featured Dolby technologies. Director George Lucas said: "Ray's pioneering work in sound played a pivotal role in allowing 'Star Wars' to be the truly immersive experience I had always dreamed it would be."

The Dolby SR (Spectral Recording) noise reduction format further amped up audio quality. Developed by Dolby Laboratories and used in professional audio since 1986—and in cinema audio since the late 1980s—it combines aspects of Dolby A, B, and C to significantly improve the dynamic range of analog recordings. Dolby's son, David Dolby, said this was his father's most satisfying achievement.

We can thank Ray Dolby's childhood love of the clarinet for the dynamic sound with which he became synonymous. His fascination with reed vibrations sparked his interest in how sound reproduces.

By 16, he was working with Ampex to develop electrical components of its tape recording system. He earned patents for the Ampex videotape recorder before he finished college.

By the time Dolby died in 2013 at age 80, Dolby Laboratories had become a global company with offices in more than 20 countries. He had more than 50 U.S. patents and numerous trademarks, including a well-known sound trademark that is often heard at the beginning of movies featuring HD surround sound.

Dolby was awarded a Grammy Award in 1995, an Oscar in 1989, and has a star on the Hollywood Walk of Fame.

This year marks the 10th anniversary of the USPTO trading cards. Requests for the cards can be sent to education@uspto.gov. You can also visit them at uspto.gov/kids.



NEWS FLASH

TRADEMARKS TOOLKIT

How does a trademark differ from a copyright or patent? What are the criteria and steps for getting one? This is among the information provided in the Trademark Basics Registration Toolkit.

The toolkit covers six subjects: learning the essentials; understanding the process; preparing to file your application; filing your application; moving through the process; and keeping your application alive.

The toolkit is available at uspto.gov/sites/default/files/documents/TM-Registration-Toolkit.pdf and also accessible via uspto.gov/trademarks/basics/online-tools.

PTAB's Resources for Inventors

Board offers a variety of ways to help inventors succeed during proceedings

SINCE THE 1800S, inventors unsatisfied with an examiner's rejection of their patent claims have had the option to file an *ex parte* appeal—on or from one side only—with the Patent Trial and Appeal Board (PTAB or board). Beginning in 2013, the board started hearing *inter partes* disputes, in which a third party challenges the validity of an issued patent.

To help inventors understand what happens when they come before the PTAB and to increase inventors' chances of success, the board offers a variety of virtual resources for the public. These include webinars, articles, webpages, and free legal tools.

Monthly webinars: The board offers two different webinars each month.

Inventor Hour webinars (uspto.gov/about-us/events/inventor-hour-events) cover PTAB proceedings at a high level, addressing need-to-know topics such as how the PTAB fits into the intellectual property litigation system, information on the *ex parte* and *inter partes* processes, and experiences of inventors who have successfully

appeared before the board. Inventor Hour webinars are designed for those completely new to PTAB practice.

Boardside Chat webinars (uspto.gov/patents/ptab/ptab-boardside-chats) provide a deep dive into PTAB processes and feature in-depth discussions on topics such as evaluating common arguments, options after a final rejection, and preparing for an appeal brief.

Those interested in attending one of the PTAB's webinars can register through the respective PTAB webpage. Slide materials, along with previously recorded sessions, are available on the respective PTAB webpages, too.

Inventors Digest articles: The PTAB publishes a monthly article in *Inventors Digest* magazine (inventorsdigest.com) focusing on various aspects of practicing before the PTAB.

As one example, the October 2021 article discusses filing an *ex parte* appeal with the PTAB. The April 2022 article addresses defending a patent in an America Invents Act (AIA) proceeding.

'New to PTAB?' webpage: The PTAB created a special webpage (uspto.gov/patents/patent-trial-and-appeal-board/about-ptab) to assist those appearing before the board. Written in plain language, the "New to PTAB?" webpage explains the fundamentals of board proceedings, how to conduct a hearing, and where to find case information.

The webpage also provides links to helpful resources and will soon be offered in 10 different languages for non-English-speaking inventors.

Free legal assistance for *ex parte* appeals: Inventors interested in filing an appeal may qualify for the PTAB Pro Bono Program (uspto.gov/patents/patent-trial-and-appeal-board/patent-trial-and-appeal-board-pro-bono-program-independent). This matches financially under-resourced inventors with volunteer



registered patent practitioners who provide free legal assistance in preparing *ex parte* appeals to the PTAB.

Inventor-volunteer practitioner matches are made by the PTAB Bar Association, which is independent of the USPTO. The PTAB Pro Bono Program will eventually be expanded to include AIA trial proceedings.

Ex parte appeal brief template: For inventors who want to go it alone without the aid of legal counsel, the PTAB created an appeal brief template.

The template ([uspto.gov/patents/patent-trial-and-appeal-board/resources/preparing-](https://uspto.gov/patents/patent-trial-and-appeal-board/resources/preparing-ex-parte-appeal-brief)

ex-parte-appeal-brief) is a Word document that walks the viewer through the various parts of an appeal brief, explains the information required in each part, and offers examples of each part. In addition to the appeal brief template, inventors may access an instructional PDF and video about how to assemble an appeal brief.

The PTAB is always eager to improve its services for inventors. Questions and suggestions may be submitted on the PTAB Help webpage (uspto.gov/patents/ptab/ptab-help) under the “Feedback and Suggestions” section. Or call (571) 272-9797.

WHAT’S NEXT

DEMOGRAPHICS SYMPOSIUM: Understanding the demographic makeup of inventors who apply for patents is a crucial first step for characterizing who participates in the intellectual property ecosystem, and for identifying policies that will expand participation. A one-day USPTO symposium on August 26 from 9 a.m. to 3:30 p.m. ET will bring together economists, computer scientists, and others to discuss research methods, applied examples, and new ideas.

The symposium will provide an overview of approaches from leading scholars in the field; identify a community of practitioners; and facilitate the application of common approaches.

There is no charge to attend, but registration in advance is required.

For more information, and for a link to register for the program, please see uspto.gov/about-us/events/advancing-research-inventor-demographics.

BLOCKCHAIN AND IP: On August 9, USPTO and East Coast Attorney James Gatto will investigate the

intersection of blockchain, patents, and open source, and the legal issues they present. The presentation will be from 2 p.m. to 3:30 p.m. ET.

The virtual event will also consider potential legal and business ramifications that exist between these topics.

A question-and-answer session will follow the presentation. Please send your questions in advance or during the event to EasternRegionalOutreachOffice@uspto.gov. For more information, email the same address.

Register at uspto.gov/about-us/uspto-locations/alexandria-va/blockchain-ip-cross-section-blockchain-patents-and-open.

TRADEMARK BOOT CAMP: Module 6 of the eight-part series, August 9 from 2 p.m. to 3:30 p.m. ET, will address responding to office actions. These are the official letters USPTO examining attorneys issue after reviewing your trademark application.

The event is free, but space is limited so please register by August 8 at uspto.gov/about-us/events/trademark-basics-boot-camp.

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

The United States Patent and Trademark Office (USPTO) is responsible solely for the USPTO materials on pages 6-9. Views and opinions expressed in the remainder of *Inventors Digest* are those of the writers and do not necessarily reflect the official view of the USPTO, and USPTO is not responsible for that content. Advertisements in *Inventors Digest*, and any links to external websites or sources outside of the USPTO sponsored content, do not constitute endorsement of the products, services, or sources by the USPTO. USPTO does not have editorial control of the content in the remainder of *Inventors Digest*, including any information found in the advertising and/or external websites and sources using the hyperlinks. USPTO does not own, operate or control any third-party websites or applications and any information those websites collect is not made available, collected on behalf of nor provided specifically to USPTO.

It's a Vital Subject, Technically Speaking



"My grandfather complains my generation is far too reliant on technology," the joke goes. "So I texted his nurse and asked her to disconnect his life support."

Whether you consider yourself high-tech, low-tech or whoa!-tech, technology is increasingly connected to our lives in some way—and it's not going to change. It has been a significant part of modern life since before all of us were born, making it a crucial component of invention and innovation.

So we're glad to introduce a new columnist this month who is an enthusiastic, learning expert on the subject.

Devin Partida has been editor-in-chief at ReHack magazine, a technology news and discussion website covering various tech niches and trends in consumer and business segments, since January 2020. She has bylines with *Entrepreneur*, CIO Insight, AOL and AT&T.

Her biggest interests are technology, startups, women in tech, the IoT and data security—all subjects that *Inventors Digest* has covered in some form.

Devin's opening Tech Speaking column with us openly wonders whether the tech market is oversaturated. Before she answers her own question—you can learn the answer, starting on Page 36—she

notes that "few to no other inventions have had nearly the same economic or cultural impact" since Apple released the iPhone in 2007. We have seen the invention of quantum computing, self-driving cars and general artificial intelligence, but all have long challenges ahead.

The same holds true for many other tech inventions of the future. Brain-reading robots. 3D-printed bones. Clothes that can "hear" (for blind people). Lab-made dairy products. Artificial eyes. Energy-storing bricks. Living robots.

Some of these inventions will come to fruition and possibly be a part of the human experience forever; some will go doors up, the way of the DeLorean.

But the creative energy behind inventing dates to the beginning of humanity. It will never die.

So hi, tech. You will never be on life support so long as the innovative spirit flourishes. And hi, Devin.

—Reid

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Devin Partida

Inventors

DIGEST

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CORRESPONDENCE

Letters and emails in reaction to new and older **Inventors Digest** stories you read in print or online (responses may be edited for clarity and brevity):

"Top 10 All-Time Auto Inventions" (May 2019):

I thought electronic fuel injection might be on your list. —LYNN WRIGHT

Maybe it should have been! But the internal-combustion engine was on our top 10 list, and fuel injection was a key component of that. Electronic fuel injection was further evolution of that

process. Automotive News says Bosch introduced what became the first successful mass-produced electronic fuel injection system for gasoline engines in 1967. It was based on technology invented by Bendix Corp.—Editor

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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.



BUMPY START FOR KK'S SKINCARE LINE

What's shakin', KK?

Not what you might expect. Kim Kardashian is being sued for trademark infringement, which her attorney says is a "shakedown effort."

Kardashian launched a new skin-care line in June, SKKN by Kim. It features nine products and retails for \$630. (Your excitement or amusement goes here.)

But Cyndie Lunsford, founder of Brooklyn esthetician studio Beauty Concepts, says she has owned the SKKN+ trademark since 2018. Last August, the company filed a cease-and-desist order in an attempt to stop Kardashian from filing for the SKKN trademark.

Kardashian's attorney, Michael Rhodes, said in a statement shared with the *New York Post* in late June: "Beauty Concepts claimed to own rights to a logo made up of SKKN+, and had just filed for trademark protection for that logo."

"The business was a one-person shop offering facials from a single Brooklyn location. The salon had no signage and was by appointment only. To our knowledge, Beauty Concepts sold no products under the SKKN+ name."

When Kardashian refused to drop the SKKN branding for her own line, Rhodes' statement claims, Beauty Concepts challenged the star's application with the United States Patent and Trademark Office. "Unsurprisingly, the USPTO rejected Beauty Concepts' own SKKN+ mark, saying that 'skkn' just means 'skin,'" Rhodes said.

Beauty Concepts filed suit on June 28 in the U.S. District Court for the

Eastern District of New York after the two parties could not reach an agreement. Rhodes said the opposition is essentially a money grab.

In *Beauty Concepts LLC v. Kardashian et al*, Exhibit 1 shows the SKKN+ trademarks prominently displayed at its current location, as well as on its website.

The Beauty Concepts filing also counters the notion that the company is a "one-person shop": "Beauty Concepts currently employs four salon employees and is planning to hire additional salon staff and expand its service lines, which Ms. Lunsford projects will increase her revenues at the current location to nearly \$1 million."

Last year, Lunsford's attorney told *Forbes*: "It is hard to believe that Kardashian's team either did not know about the prior use of SKKN+ or knew and adopted the SKKN brand name anyway to steamroll a small, minority business." —Reid Creager

BRIGHT IDEAS

FEND SUPER

FOLDABLE BIKE HELMET WITH LIGHTS

fend.io

FEND SUPER folds to 50 percent of its size, with front and tail lights.

The waterproof lights allow for 360-degree visibility up to 800 meters away. The removable lights offer three flash settings for you to be seen by motorists for nighttime riding.

FEND SUPER is designed to meet U.S. Consumer Product Safety Commission and European EN1078 safety standards for bicycles, skateboards, and e-bikes/scooters under 20 mph. It has a patented safety lock system and 12 vents.

The product, with added features following the launch of FEND One in 2016, will retail for \$129 with December shipping to crowdfunding backers.



ROIDMI EVA

SELF-CLEANING, EMPTYING
ROBOT VACUUM

roidmi.com

ROIDMI EVA's makers say it is different from other robot vacuums with its added self-cleaning and smart mop drying features. It works with Alexa and Google.

The design is the combination of a dust collection base and an automatic mop cleaning module. The extra-large dust bag is big enough to collect dust for 60 days. The 4-liter, large-capacity water tank separates clean water from dirty water.

The self-cleaning feature onROIDMI EVA can wash the mop automatically to keep it sanitary, before returning to the spot it left off to continue mopping and vacuuming. The soft wind feature helps to quick-dry the mop to prevent mildew and odor.

ROIDMI EVA retails for \$1,300.

One Good Ring

DIGITAL PROFILE SENDER

onegoodcard.com/pages/onegoodring

One Good Ring has a built-in, wireless chip that allows its users to share contact details, pitch deck, CV, portfolio or even social media links by tapping the ring against someone else's Near-Field Communication-enabled smartphone.

The ring has no batteries, and no charging is required. It comes with a profile dashboard so you can edit your details.

One Good Ring is made of pure ceramic, with a sleek brushed metallic finish (available in Onyx Black or Nova White). It is waterproof and chemical resistant.

The ring will have a suggested retail price of \$129.90 and will be shipped to crowdfunding backers beginning in December.



**"Do not get
obsolete like an
old technology.
Keep innovating
yourself."**

—SUKANT RATNAKAR

Philips Screeneo U4

SHORT THROW PROJECTOR

screeneo.com

Dubbed an "ultra proector," Screeneo gives users a huge screen without the hassle and space intrusion of a big-screen TV. You can get 120 inches of full HD video with only a 22-inch setup from the wall, or 80 inches from 12 inches away.

Picture and text clarity is said to be a prominent feature, with Texas Instrument DLP cinema technology. Watch in full HD 1080p with 60fps high-definition sharpness, with fine detail that can be lost at lower resolutions.

Features include fast autofocus, auto-keystone, and 4-corner correction. The device sets up easily.

Screeneo U4 will retail for about \$1,200. Shipping to crowdfunding backers is set for September.



Prescient Pioneer

BLACK HAIR CARE VISIONARY WILLIE L. MORROW SET TRENDS, FOUGHT RACISM WITH EXCELLENCE **BY REID CREAGER**

IN TERMS of iconic 20th-century chairs, Archie Bunker's not-even bourgeoisie throne used in the 1970s sitcom "All in the Family" is pop-culture royalty at the National Museum of American History in Washington, D.C. Sammy Davis Jr. once sat in that chair.

Some 3,000 miles away in Escondido, California, Willie L. Morrow's midcentury red velvet barber chair—the neck rest worn from use—was among the display items featured in a 2016 museum exhibit about African-American hair culture at the California Center for the Arts. Michael Jordan once sat in that chair.

The Bunker character was racist; his problems were largely of his own making. Morrow's problems were real-life racism, which he overcame in its own neighborhood.

'He did not fight with a fist'

The son of a family of sharecroppers in Tuscaloosa, Alabama, Morrow taught himself

barbering and chemistry before choosing San Diego as a place to set up barbershop in 1959. The choice of location was deliberate.

"My dad took advantage of the fact that San Diego had been dubbed the Mississippi of the West," his daughter, Cheryl Morrow, told the *San Diego Tribune* after her father died on June 22 at 82.

"He did not fight with a fist; he created things. It was his way of dealing with racism through economics. ... In my father's words, 'My job was to be so good, and so awesome, I would become racism proof.'"

Morrow set out to be an expert in his field who not only cut hair but created products and hairstyles for it.

"I know a lot about black hair, straight hair, curly hair, wavy hair—you name it," he said in 2016. "I'm a hair guy."

He eventually founded the California Curl Company at its Market Street location in San

His most publicized achievements are inventing the Afro pick and being credited with pioneering the Jheri curl hairstyle.



Diego, where he patented his signature invention that became a symbol of pride for millions of African-Americans: the Afro pick.

Morrow refashioned the traditional comb with one that had long teeth and wide gaps for grooming highly textured hair. The Afro pick, originally called the Eze-teze (pronounced easy tease), is still available commercially.

He received a utility patent for it in 1977. Morrow had two other patents related to hair grooming: the double twist hair roller in 1982, and the hair straightening nozzle in 2000.

Latent legacy

Morrow's drive to be "so good, and so awesome," and the fact that he cut the hair of many local politicians, led to a big career break.

In the 1970s, the U.S. Department of Defense enlisted him to teach hair cutting and to cut hair on military bases and in war zones around the world. By 1969, at age 28, he became Delta Air Lines' youngest Flying Colonel with a million sky miles. He went on to write books about hair cutting and styling.

Morrow's other main claim to fame is being a pioneer for the Jheri curl hairstyle that was popular in the 1980s. "His version was eight years before the commercialization of the Jheri curl (named after hair care entrepreneur Jeri Redding)," Cheryl Morrow told CBS-8 in San Diego.

At its peak, Morrow's multimillion-dollar company had more than 220 employees. But a less-publicized legacy is his effort to help African-Americans economically and provide them a sense of direction and belonging.

He created San Diego's first black radio station, 92.5, in 1979. He started the San Diego Monitor newspaper in 1986 to give affordable advertising for black businesses.

Shawn Moye, creator of the E-Sports Trainer who recently appeared on the national TV show "America's Big Deal," is far too young to have lived the heyday of the Afro pick. But he told *Inventors Digest* that Morrow is an inspiration for him and many others from prior and current generations.

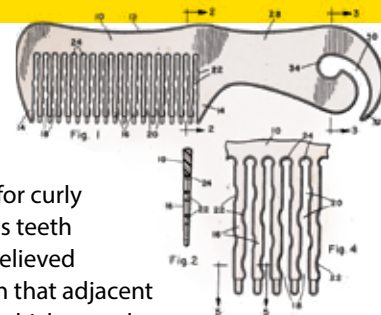
"Willie Morrow was such a visionary," he said. "His contribution to this world is confirmation

PATENT PATHWAY



U.S. Patent No. 4,026,307, the Afro comb, was granted on May 31, 1977. It gives this lengthy one-sentence description:

"The invention is a comb adapted for curly and particularly kinky hair and utilizes teeth which are provided with notches or relieved portions along the sides thereof, such that adjacent teeth define hair-receiving channels which are other than parallel-sided, these channels being expanded at intervals along their length to define either generally serpentine shapes or having spaced substantially circular expanded areas along their length to facilitate the passage of curly hair therethrough, and an expanded area of the channels at the base of the teeth permits the accumulation therein of hair as it is combed, without resulting in wedging and binding, which ordinarily occurs at the juncture of the teeth with the spine, there also being a specialized arcuate bay in the comb handle having an expanded end to permit the simplified parting of the hair without the wedging of the hair as would occur should a normal comb be used to make the part."



that one seed can affect millions, as his products have been used by a countless number of people.

"He will always be an inspiration to me as I travel along a similar path. I thank him for all the doors he helped open for me and others like me—not only in race but in spirit.

"I humbly stand on the shoulders of Willie Morrow and other inventors like him. RIP to an amazing individual, businessman, and entrepreneur." 🙏

INVENTOR ARCHIVES: AUGUST

August 27, 1855: Clara Barton became the first female federal employee to achieve equal status when she was hired by the United States Patent Office as a clerk. She had established a free school in Bordentown, New Jersey, in 1852 but resigned after it hired a man at twice her salary.

Barton was paid \$1,400 a year at the patent office. She later helped distribute supplies to the Union Army during the Civil War and founded the American Red Cross.



Going Solo

IF YOU WANT TO PRODUCE YOUR INVENTION YOURSELF, RESEARCH MARKET POTENTIAL AND THESE COSTS **BY JACK LANDER**

HAVE YOU considered producing your invention on your own, rather than patenting it and licensing your patent?

Producing is tempting and has advantages, but it is also a relatively risky option. Still, if you feel that producing is for you, the first step is to check out your product's market potential.

Look on Amazon.com to determine if you will have competitors. How many? What is their selling price? Is your invention better in at least one major feature that will attract buyers? Or is it merely novel? Will it stand out among lots of other products, or will they bury it? Check catalogs and retail stores also.

Let's assume you have a place among competition and you decide to proceed.

The next step is to order a patent search and patentability opinion. If that opinion suggests that you can't get a patent, you may decide to produce without a patent or abandon the project and go on to another.

Let's assume your patentability opinion is favorable.

Except for making a prototype or producing a few samples for user feedback, producing will probably mean buying components from specialized vendors, and assembling and testing by yourself and maybe an assistant.

So, here are the steps you'll most likely take:

- Produce and test a prototype.
- Revise as necessary.
- Determine the production methods that will produce each component.
- Learn the economic options for each method. (Tooling investment vs. part cost.)
- Determine the quantity you will buy for your first production run.
- Determine your total cost per unit for a practical first run quantity.

- Add up your required total investment in tooling, inventory, and patent.
- Make sure that you can finance your investment.

A prototype will assure you whether your design is (or is not) practical. Make design changes if necessary. Can it be made with fewer parts? Smaller?

Most components will have a range of production methods—often three, four, or more. The best choice involves a compromise between tooling investment cost and cost per piece. And by tooling, I mean the mold, die, program, and so forth that is required to be added to the basic machinery that produces parts. A plastic injection molding machine can produce nothing until a mold—your mold—is installed in it.

The universal principle is that the more you invest in tooling, the lower your cost per piece.

For example, you could have a 3D-print vendor print a plastic component. The required tooling would be the program to drive the printer.

This would probably be in the \$50 or higher range for parts of typical complexity. That's pretty low compared with "hard" tooling costs—a mold, for example—but your 3D printing cost per piece will be several times that of an injection-molded part. And between 3D printing and molding is machining in a programmable machining center.

Gauge production costs

So, it is important you learn the various methods and their options for producing components. And since that mold produces only your part, you have to have it custom made. A mold may cost as little as a thousand dollars or as much as \$100,000 plus, depending on the size and complexity of your part.

One of the best ways to learn about tooling options is to visit vendors and ask a lot of



The universal principle is that the more you invest in tooling, the lower your cost per piece.

questions. For example, “What range of quantity will this tool be appropriate for?” Expect an answer like, “Any quantity from 1,000 on up.”

Vendors quote quantities that are convenient for them, not necessarily for you. An injection molding machine may take an hour to purge, install your mold, and run several parts before judging that production can begin.

That’s called setup. Vendors like to spread the setup cost over some practical production quantity. Theoretically, if you wanted only one part and were willing to pay the cost of setup plus the part, they should be willing to run only one part.

But vendors typically don’t agree with such reasoning. Loading a thousand-pound mold is a lot of work.

Another question to ask: “If I wanted to lower the cost of my part, what would you suggest?” Or “Suppose I want to buy only a hundred parts to begin with. Can you suggest a different process that would keep my cost down?”

YouTube has hundreds (maybe thousands) of demonstrations of production processes, such as “injection molding vs. 3D printing,” which I just watched. Check it out.

If you can afford it, consult with an industrial designer who specializes in production methods. (Careful here. There are many kinds of industrial designers. Be sure the one you select is an *expert* in production economics.) Not cheap, but it may

pay for itself in the first production run.

Be sure to ask about production ranges above and one below the method the designer recommends. Then, talk to vendors about all three methods.

Using the method you have selected, or have been advised to use, get price quotations from at least two vendors for each component. Ask for component prices at various ranges—such as 500, 1,000, 2,500, and so on. Don’t forget, as prices go down, your inventory investment will go up—also your need for storage space.

Now, add up all the component costs. Add in some reasonable cost for assembly and packaging, and multiply by five to estimate your approximate retail price. Compare with the price of products that will compete with yours.

Shocked? That’s the usual reaction. It’s really tough to start out small and compete with people who have tooling to make large quantities. Increasing your quantity range, and consequently the required tooling, means you’ll have to invest in inventory that you may not sell.

Have a backup plan

So, you see why I recommended that you don’t file for a patent as an early step. You may conclude that you won’t be able to compete unless you invest in high-quantity tooling, and produce in large quantities before your sales volume justifies them.

Your total cash investment may be much greater than you can afford. And of course, you'll still need to add at least \$10,000 to \$15,000 on top for your patent.

Your first production run is likely to cost in the \$10,000 to \$100,000 range and may not enable you to price competitively. I sympathize. I've been there and had to retreat.

Whatever the amount of your investment need, keep in mind that the main reason startups fail is lack of capital.

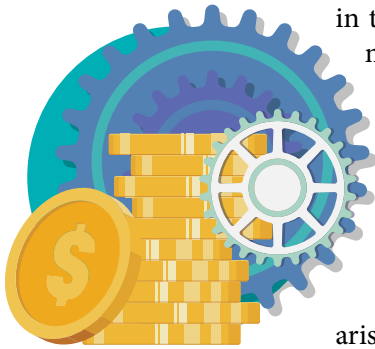
Unanticipated expenses will always arise. Have a backup plan. It's better to know the realities of producing than to plunge in and end up always needing another few thousand dollars to succeed, and not finding it.

The only way to beat the odds, if you can't find the money needed to start with adequate

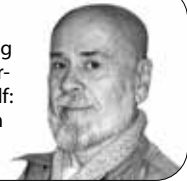
finance, is to invent small, simple products that don't require a plastic injection mold or die set at the start. Then tool up with less than optimum tooling and test the market by selling at a loss for a short time.

If it turns out that you may have a winner, you'll have an easier time finding the money to tool up appropriately.

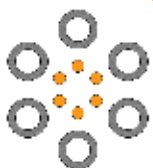
Profiting from inventing is not easy, but it can be done. And remember, like any trade or profession, it usually takes practice and time to be successful. 📌



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.



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PART 4

Inspiration Epilogue

3 MORE SOCIAL MEDIA POST IDEAS FOR INVENTORS,
AND BEST PRACTICES **BY ELIZABETH BREEDLOVE**

This is the final installment of a four-part series providing inspiration for content on social media platforms.

DURING the past few months, I've published 38 prompts and ideas for social media posts for times when you're out of ideas and stumped on what to publish next. Consistently posting fresh, interesting, engaging content is a big part of successful social media marketing, but every social media manager deals with writer's block at one point.

This month I've got a few more content ideas, along with some social media post best practices to help you round out your posting strategy.

Reshare or repurpose your most popular posts.

If you posted something a month or more ago that performed exceptionally well, post it again! If you can tweak the post slightly to make it not quite the same thing that's ideal, but it's OK to reshare or repurpose a popular post, especially if it wasn't posted too recently. There's no need to reinvent the wheel!

Share content from other industry leaders.

Are you following other inventors and leaders in your industry? If not, now is a great time to start, especially on LinkedIn.

If they post something you find valuable that your audience is likely to enjoy as well, share the post. If you read something interesting they wrote on their blog, or you come across a valuable interview with them, share it on your platform and tag them in it.

Taking this approach and sharing content from other leaders in your space accomplishes two things: It's a way of providing additional value to your own followers, and it's a way of networking with these industry leaders. They may even return the favor and share some of your content.

Share your business' values to build trust with your audience.

What is important to you and your company? Do you care about the environment? Do you invest in your community? Is there a specific value or cause fundamental to your business? Share about this and invite your followers.

Don't post this to brag, but make it clear that you care about a certain value and offer an invitation for your followers to care. You can directly invite them to get involved, or you can be more subtle by sharing content related to the cause. Be sincere in these posts; followers will notice if you seem disingenuous.

Social media best practices

Remember to always follow social media marketing best practices when you post to your platforms.

Stay true to your brand's personality.

Each brand has its own identity and personality, and it's important to know what yours is. If you don't feel confident in your brand and it's not something you can figure out yourself, consider hiring a branding expert to help get you there. Then, always stick to your own voice and style when you post.

If one of the post ideas I've shared doesn't fit your brand, don't use it. Staying consistent helps your audience understand exactly who you are and what you're about, and makes you seem more trustworthy.

Post at the right times. There's no specific, universal time you should always post to social media.

Generally speaking, posts that are published in the afternoon or evening in the middle of the week tend to perform best, but this varies greatly according to the demographics of your audience and the social platforms you use.

A more effective way to determine the best times to post is to look for patterns in your most



Each brand has its own identity and personality, and it's important to know what yours is.

successful posts. When were they published? What day of the week and what time of day? Examining this should give you a general idea of the best time to publish your posts.

Focus on video wherever you can. It's no secret that social platforms' algorithms favor videos, as these platforms push to become more and more video-based. Post videos whenever you can, as even basic videos are likely to get more views than images and text.

This does put the onus on you to create video content, but Instagram and Facebook both have built-in video editors, and there are plenty of other excellent video-editing apps that allow you to create good videos right from your smartphone. These are often cheap or even free, making video creation more accessible than ever.

Most of the post ideas shared in this series can be turned into videos or posted with videos accompanying them, as long as you use a little creativity.

Respond to comments. Remember, social media marketing is more than just making posts. Community building is a big part of it, and community building goes both ways.

If people take time to engage with your posts by leaving comments, spend time responding to

them—especially if they ask a question. Keep tabs on your inbox, and if someone sends you a direct message respond as soon as you can.

Check comments and messages at least once a day to stay on top of them and ensure you reply in a timely manner. Of course, always be kind and courteous, even if you get the occasional negative comment.

Keep text on posts short when possible. As a general rule, visual content performs better than written content on social media. In other words, typically a post with a picture or video and a short caption will do best.

Include all necessary information in a post, of course, but also keep it short and to the point. Stay away from overly wordy or unnecessarily long posts. Remember, users are likely to quickly scroll down their feed, so you want your posts to be eye-catching and easily skimmable.

Best of luck in creating a highly successful social media content calendar and posting strategy! 📅

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.



Top of the Hops?

AT-HOME BEER-MAKING SYSTEM OVERCOMES MYRIAD HICCUPS ON THE WAY TO SUCCESS **BY JEREMY LOSAW**

MATT GOFF and Aaron Walls planned a coffee-related invention. Then they woke up.

They met about 10 years ago at Cornell University while studying for their master's degrees. During an entrepreneurship class, they worked together to start a business to build a chain of coffee carts. But the plan had problems. They lost interest and decided to pursue another idea.

Walls was a homebrewer who had some frustrations with controlling the process to make good beer. This requires a lot of equipment, tight control of the brewing variables such as temperature, and the time and cleanliness to bottle it once it is done.

"He had all sorts of problems controlling temperature during fermentation," Goff said. "If you don't control the temperature during fermentation, you end up with bad beer."

"So, we got together and made a business plan for this company."

The eventual result is BEERMKR, a counter-top, at-home beer-making system that brews craft beer one gallon (a 12-pack) at a time.

The grains and other ingredients go in the top of the machine, and fresh beer can be poured in just a week. The device uses real grain formulas to extract fresh flavors to make high-quality brew; kits are available for any style a beer lover would want.

At the heart of the process is a unique bag-and-valve system that controls the extraction from the grain

and allows yeast and other slag to sink to the bottom—away from the brew. Pre-boiled hops allow the right hop profile to be added from the start.

An app allows users to monitor the process. Once the beer is finished, it is transferred to the BEERTAP device, which dispenses the fresh carbonated beer. The system comes with a free ingredients kit.

Early evolution

Initially, Walls and Goff built a product that would wrap around a homebrew fermenter and cool it. It was aptly dubbed the LagerJacket but failed on Kickstarter.

They quickly pivoted to a new version that would cool via immersion. Both versions of the BrewJacket immersion systems were successfully funded on Kickstarter and lauded by the homebrew community. Evgeniy Tkachenko, their lab manager at Cornell, became a partner who was integral to getting the device off the ground. BrewJacket was founded in 2014.

Despite the success of their immersion lager cooling devices, the partners had a bit of a conundrum. The product was somewhat of a niche, and they didn't know how much more they could grow with it. They wanted to expand more inside the homebrew world.

"There are two ways we can go," Goff said they decided. "We can either make our own home brewing setup, or we can make a device that lets anybody homebrew."

"We have to make it really easy; we have to make it really approachable; we have to make it where you can make really good beer... because nothing like that existed on the market."

So they pivoted and started building the system to let anyone homebrew via Boulder, Colorado-based BEERMKR. This turned out to be a massive challenge.

BEERMKR's unique bag-and-valve system controls the extraction from the grain and allows yeast and other slag to sink to the bottom—away from the brew.



Parallel pursuits

The two primary challenges in the development of BEERMKR were that the device had to work very well—and the recipes and resulting brews had to be good, too.

They worked on these challenges in parallel and eventually had both a device that looked and brewed beautifully, with good recipes. But then they found another problem.

They had developed the device to use recipes that used all extract recipes. This was easier for the design of the device but one that left them with a narrower market.

So, with the consequence of a full redesign looming, they decided to change to a full grain brewing system. This introduced the complication of having to deal with grain handling, particulates, and all the custom valving to handle it.

Eventually, the result was a much better device that was more robust for their target market—and with more interesting technology.

Patents and plans

The BEERMKR system has several patents that cover the device and underlying technology.

The patent portfolio has been helpful to secure investment for the product and protect it from copycats. However, their core philosophy is to simply make BEERMKR the easiest solution for customers to make great beer so they do not have to look outside their ecosystem.

The BEERMKR device is made in China, but the ingredients packs are all made in America.

At the start of the manufacturing process, the team was under the gun to ship the product before the first round of tariffs on Chinese-made goods. Goff went to the factory to oversee the production line and teach line workers how to build the device. He also had to accept that the first batch would need some rework to make shipping deadlines, but he was able to work out the kinks in the process. Now they have efficient production.

BEERMKR was launched on Kickstarter in 2018 and blew through their funding goal with 1,031 backers and \$398,276 raised. After backers received their devices, sales have been great ever since.



“We have to make it really easy; we have to make it really approachable; we have to make it where you can make really good beer... because nothing like that existed on the market.” —MATT GOFF

Walls and Goff took the device to this year's Consumer Electronics Show to display the latest version and get more PR. They are working on perfecting the current BEERMKR model and in the planning stages for their next move, while consulting with customers to see what their needs are and which features their next home-brew device or accessory might have. 🍷

Details: beermkr.com

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



Practical Pouch for Purse Packing

WOMAN'S INVENTION PREVENTS HAIRBRUSH MESSES,
HELPS WITH ORGANIZATION **BY EDITH G. TOLCHIN**

I **TYPICALLY** like to feature products by women inventors because they are innate problem solvers and frequently underrepresented in this industry. Here is a business owned by Athalia Monae of Chicago, whose simple new product solved the problem of packing a hairbrush for travel.

Perhaps you're in a hurry and have some hair gel left on your brush but have no time to thoroughly clean it before packing it. Pouches by ALAHTA offers a solution.

Edith G. Tolchin (EGT): How did Pouches by ALAHTA products come about?

Athalia Monae (AM): Several years ago, I was searching for a pouch of some sort to store my hairbrush or comb. At the time, I was wrapping my comb or hairbrush in a paper towel to prevent stray hairs and hair product from transferring from the hairbrush onto the contents of my purse.

I searched several community stores, retailers and even online for a hairbrush pouch where I could store either one of my hairbrushes or combs, but none of them had what I was looking for. So, one day I was sitting at my kitchen table trying to figure out if there was any stone left unturned when I came up with the idea to create my own.

Before finally deciding on doing it, I continued researching thoroughly for hairbrush pouches similar to the one I envisioned. But after several days of fruitless research, I sketched what I wanted my product to look like, had my first prototype made, and contacted a patent attorney to find out if I could patent my design. When he told me we could try, I started my journey.

EGT: What problem does the hairbrush pouch solve? How is it different from similar pouches?

AM: Not only does the ALAHTA pouch solve the problem of stray hairs transferring from hairbrushes or combs onto the contents of purses, travel luggage, or gym bags, it also helps keep things organized.

Most of the time I carry a mid- to large-sized purse, and things are constantly getting lost in there. With our pouch, my hairbrush or comb is one less thing to worry about losing.

I own a Denman brush, a round brush, a rake tail comb, a paddle brush, a rat tail comb, and a wide-tooth comb. I would like to be able to store either one of those in my pouch.

The thing that makes our pouch stand out from other similar products is its unique design. Although it comes in one shape and size, our pouch can accommodate hairbrushes and combs of different shapes and sizes, providing the customer with better value for their money.

Moreover, the material used to make the product makes it easy to clean with a damp, soapy cloth or in the washing machine on gentle cycle. Another added benefit is the selection of different colors and prints we offer.

EGT: Did it take several prototypes for you to get to production quality?

AM: Oh, yes! I had a total of nine prototypes made by four different manufacturers before I was satisfied. A beautiful thing that came out of that experience was that I learned a lot from the people I was working with, while also building positive connections.

“Our idea with our hairbrush pouch was to design a product for traveling needs that’s not only practical, but trendy and stylish as well.” —ATHALIA MONAE

EGT: Are any of your products patented? (Especially the hairbrush pouch?) If so, please let us know if the process was difficult. If not, what distinguishes your products from other similar pouches?

AM: Yes, the ALAHTA pouch is patented. The process was not actually difficult.

First, I carried out a thorough research myself to make sure my idea didn’t already exist. Then, when I hired a patent attorney, he explained that they do their own research on behalf of their clients prior to filing the patent application, which pleased me because I was afraid I might have missed something during my research. Fortunately, I didn’t.

EGT: How many products are you featuring? What is the retail pricing? Colors and sizes? Different fabrics?

AM: We’re currently featuring the ALAHTA pouch, which is made of polyurethane and knit material and is available in black with a red accent color (houndstooth print), grey with a yellow accent color (houndstooth print), and solid black with a white accent color.

The pouch dimensions are 11-by-4.5-by-2 cm, and the retail price is \$24.99. We’re also featuring a black polyurethane leather jewelry pouch which retails at \$10.99, and two suede jewelry pouches in tan and pink at \$7.99 each.

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

AM: Originally, our plan was to manufacture in the U.S.A., but the manufacturers I worked with weren’t able to make the product to my satisfaction, so we decided to produce overseas.



The manufacturer who produced our product was very kind and professional. They stuck to the schedule and made sure we were satisfied throughout the process.

The one thing that disappointed me, however, was that some product was missing. After discussing the matter with the agent, we came to the conclusion that it must have been lost during shipping.

EGT: Have you ever considered applying for “Shark Tank” or done any crowdfunding?

AM: I’ve never done any crowdfunding, but maybe I will consider applying for “Shark Tank” one day. I’ve had several people ask me that, but at this time, I don’t believe I would be a good candidate for the show because I don’t have the numbers, as far as sales go.

Pouches by ALAHTA can accommodate hairbrushes and combs of different shapes and sizes.

EGT: Who manages your PR?

AM: I manage my own PR. Besides being a business attorney, I've always represented myself.

EGT: What has been your biggest obstacle in product development?

AM: I've had several challenges on this journey which I'm grateful for because out of those challenges, I've met some great people. Also, it has helped with my personal growth. However, I would have to say that commercialization has been my biggest obstacle in product development.

EGT: Do you have any guidance for new entrepreneurs?

AM: I would say that entrepreneurship is not for the faint of heart. It's a lot of work, research, commitment, diligence and sacrifice.

But if this is something you feel passionate about doing, stick with it; don't give up. If you need to walk away from that project for a second to regroup, allow yourself to do that.

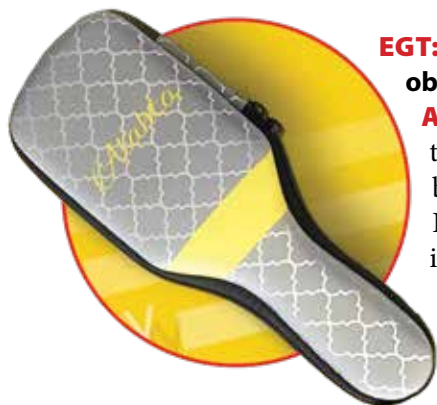
Don't see situations that didn't work out as failures. Use them as motivation to do better. Most important: Stay focused.

EGT: Where do you see Pouches by ALAHTA in the next five years?


AM: I will be adding more prints, colors and new products in the near future. I see Pouches by ALAHTA in multiple retailers, locally and internationally, and with several new products. 📧

Details: amona@pouchesbyalahta.com

Edith G Tolchin has written for *Inventors Digest* since 2000. She is an editor (opinionatededitor.com/testimonials), writer (edietolchin.com), and has specialized in China manufacturing since 1990 (egtglobaltrading.com).



More prints, colors and new products are planned.



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LIGHTING THE FIRE

FACULTY AT HISTORICALLY BLACK COLLEGES AND UNIVERSITIES
ARE EXPOSING EAGER STUDENTS TO IP FUNDAMENTALS

BY JUSTIN CHAPMAN

A SOUTH CAROLINA STATE UNIVERSITY STUDENT created a way to make meal preparation faster, and he applied for a patent. A student at Xavier University in Louisiana is developing a line of skincare products and plans to trademark her logo.

Intellectual property—including patents, copyrights, and trademarks—is a competitive advantage in today's economy. Yet most students aren't exposed to these tools.

Underrepresented entrepreneurs face even more overwhelming, systemic barriers. Consider that a Michigan State University study found between 1976 and 2008, African-American inventors were awarded six patents per 1 million people, compared to 235 patents per 1 million for all U.S. inventors.

Statistics like those are why the Michelson Institute for Intellectual Property (Michelson IP) launched the HBCU IP Futures Collaborative—a

PHOTOS COURTESY OF MICHELSON IP



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**XAVIER
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faculty-led community of practice aimed at evangelizing IP education to fellow campus educators, creators, innovators, and entrepreneurs.

Michelson's mission

"We need to do something to make sure we recruit women and people of color, and try to have some equity," said Dr. Gary K. Michelson, founder of the Michelson 20MM Foundation, which oversees Michelson IP.

IP education has "lit a fire under the students," said Dr. Jerald Dumas, dean of the Graduate College and chair of the Chemical Engineering Department at Hampton University in Virginia.

As part of the program, Michelson IP provided digital curricula, resources, videos, textbooks, and \$25,000 grants to the seven HBCUs that joined the program: Bethune Cookman University, Morehouse College, Norfolk State University, Tuskegee University, Hampton, South Carolina State, and Xavier.

"Our nation's HBCUs are a wellspring of creativity and ingenuity," Michelson said. "The collaborative will further uplift these students in identifying and securing their valuable IP for the benefit of generations to come."

Michelson IP also produced the textbook "The Intangible Advantage: Understanding Intellectual Property in the New Economy" to provide free IP education to students. It addresses patents, trademarks, copyright, and trade secrets. It is available as a digital textbook called "Introduction to Intellectual Property"

through OpenStax, the leading publisher of free, open educational resource textbooks.

More than 23,000 students worldwide have taken the Michelson IP course, a free resource hosted on the Udemy e-learning platform. Nearly 400 institutions have embedded Michelson IP's curriculum and resources into the classroom.

A burning hunger

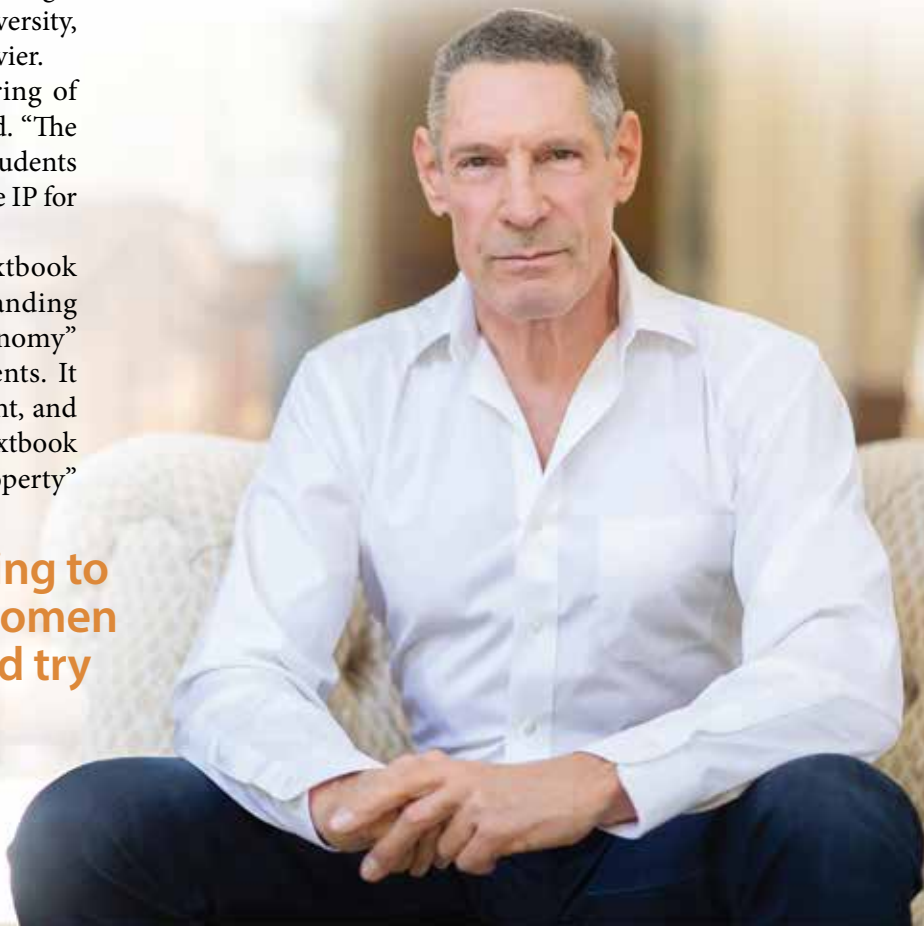
Dr. Muhsinah Morris, director of Morehouse in the Metaverse, said there's a hunger among young people for IP education. They know it is a key to their success.

"I had students actually reading the book ["The Intangible Advantage"]. They won't read the chemistry books that they paid for," Morris said.

Dr. Gary K. Michelson is one of the most prolific medical inventors in history as the sole inventor on 992 issued U.S. and foreign patents, all of them related to the treatment of spinal disorders.

"We need to do something to make sure we recruit women and people of color, and try to have some equity."

—DR. GARY K. MICHELSON



"I had a student before Day 1 say, 'I'm already through Chapter 3. I was just so curious, and I couldn't stop reading. I went through the PowerPoints and videos, too.'"

"And to be frank, it's not like he was the best student I've ever had. That's the enthusiasm that I want to see. The fact that he had this exploratory curiosity that was being forged and nurtured was really exciting."

Dumas is also co-principal investigator of Hampton's Innovation Corps (I-Corps) Site. I-Corps Sites are National Science Foundation-funded organizations that provide infrastructure, advice, resources, networking opportunities, training, and funding to entrepreneurs to transition their concepts into the marketplace.

"The Michelson IP education is synergistic with I-Corps activities, where students can learn about customer discovery and support their business ideas," he said. "With the Michelson funding, I could introduce them to protecting their intellectual property and learning the differences between trademarks and other types of mechanisms to protect such property."

Two chemical engineering students served as campus ambassadors, produced PowerPoints, and made presentations to groups across campus—including to the student chapters of the American Institute of Chemical Engineers and the Society of Women Engineers. Dumas plans to follow up with those chapters to help them with any patent applications.

The program completed Phase 1 in the spring semester; it introduced the students and faculty to IP education. Phase 2 will help students take the next step of developing their ideas to filing patent and trademark applications.

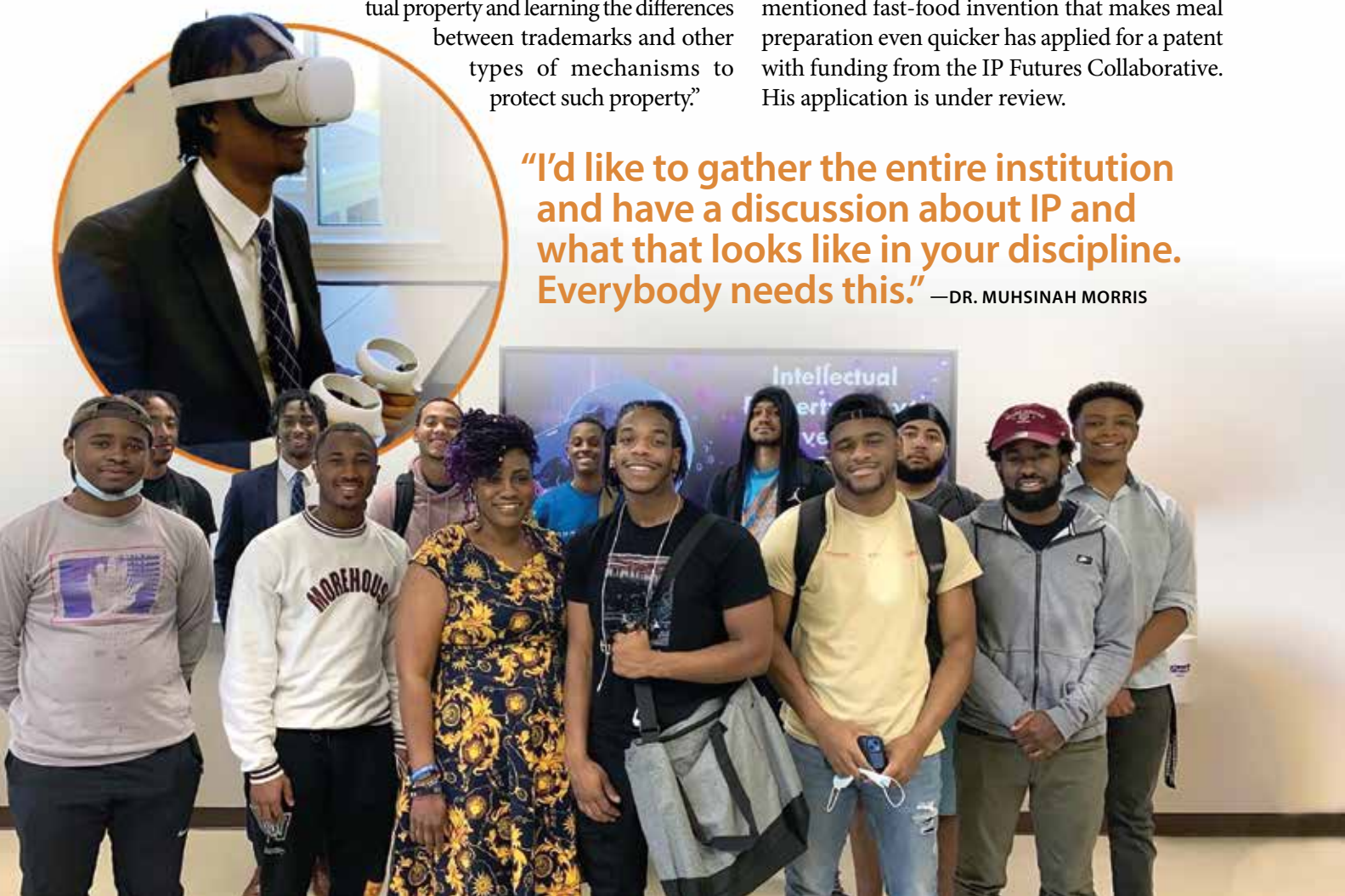
"In Phase 2, we want to engage the students even more, bring in more guest speakers, and actually have students go through mock invention disclosure applications," Dumas said. "Phase 2 will be more hands-on."

Incubating ideas

Some students aren't waiting. The South Carolina State engineering student who created the aforementioned fast-food invention that makes meal preparation even quicker has applied for a patent with funding from the IP Futures Collaborative. His application is under review.

Dr. Muhsinah Morris of Morehouse College teaches her education and chemistry courses in virtual reality and integrates the metaverse and NFTs into her lessons. She talked to her students about why so many people of color don't pursue IP to protect their work.

"I'd like to gather the entire institution and have a discussion about IP and what that looks like in your discipline. Everybody needs this." —DR. MUHSINAH MORRIS



Other students are developing their own ideas. “We’re trying to get students to think about coming up with ideas of things that they can do to start a business and innovative things,” said Dr. Barbara Adams, dean of the College of Business at South Carolina State.

Dr. Mark Quinn of Xavier, the Conrad Hilton endowed chair of entrepreneurship, launched a business incubator called the X-ncubator for students looking to start their own business.

“I am working with one student in the incubator who’s developing a line of skincare products,” he said. “Her intent is that she will actually trademark her logo, and we will help her with that.”

Mass Communications major and Entrepreneurship minor student Hannah Shareef served as an IP ambassador on campus and developed a marketing campaign about IP. They coined the term “IP is Dope,” which they printed on bottles and T-shirts.

Shareef installed pop-up tables around campus and handed out the swag. This enabled them to quickly build their email list, gain followers on Twitter, and get the word out about IP education.

Quinn said the videos about patenting, trademarking, and copyrighting are what really resonated with students.

“Those hit the sweet spot with students in terms of taking what could be extremely complex topics and delivering the content in a very engaging and understanding manner,” he said.

He’s hearing from students that they are learning new things.

One student in his Intro to Entrepreneurship class, Jana Ewing, said the videos were “helpful, easy to understand, broke down everything, and expanded my prior knowledge.”

Promoting understanding

Quinn said the importance of IP education is twofold: It helps students realize the value of their own talents and creativity, and it keeps them from inadvertently infringing on other people’s IP.

Morris said there are some definite gaps in understanding IP protocols.

“Most students understand patents, but they don’t understand anything else,” she said. “They

THANK YOU



Michelson IP would like to thank the universities and professors who led this program on their campus, from left to right:

Dr. Dennis Pires, Bethune Cookman University; **Dr. Muhsinah Morris**, Morehouse College; **Dr. Kevin Santiago**, Norfolk State University; **Dr. Vickie Cox Edmondson**, Tuskegee University; **Dr. Jerald Dumas**, Hampton University; **Dr. Barbara Adams**, South Carolina State; **Dr. Mark Quinn**, Xavier University, and faculty advisor **Nicole Morris**, Emory University School of Law.



know that patents and copyrights exist, they just don’t know how, why, the ins and outs.”

Devin Smith, a student in Dr. Vickie Cox Edmondson’s Business Policy Capstone class at Tuskegee, has been creating original work for a while but had little knowledge of intellectual property and copyright laws.

“When I find the opportunity to get all my work patented and copyrighted, it will eventually give me the space and foundation to create more and display the work publicly,” Smith said.

Dr. Cox Edmondson is a good example for her students: She successfully filed for a trademark in March 2022 for her book, “Thinking Strategist,” which provides readers with additional resources.

Dumas said IP education should be taught to all students.

“Every school across campus could definitely benefit from this content,” he said. “Many of our students leave as entrepreneurs with their own side projects they worked on outside of Hampton.”



ABOUT THE MICHELSON INSTITUTE FOR INTELLECTUAL PROPERTY

The Michelson Institute for Intellectual Property provides no-cost IP educational resources to empower budding inventors and entrepreneurs. Michelson IP is an initiative of the Michelson

20MM Foundation, which focuses on a range of issues, including digital equity, smart justice, and open educational resources. For more information, visit michelsonip.com.

THE MICHELSON INSTITUTE FOR INTELLECTUAL PROPERTY

THE MICHELSON 20MM FOUNDATION

Dr. Michelson has advocated for teaching IP literacy as early as first grade. Adams agreed that it's a good idea to introduce IP education at an early stage. Morris went even further, adding that IP education should start in kindergarten.

"It should be almost like how we've been pushing for financial education," she said. "This is another type of education that helps prepare our students for entrepreneurship, making sure they are protected and understand their own rights in this world."

In addition to the HBCU IP Futures Collaborative, Michelson IP also partnered with the National Association for Community College Entrepreneurship to launch teaching guides for community colleges.

Adams wants to develop an actual course in IP that students across campus will be able to take.

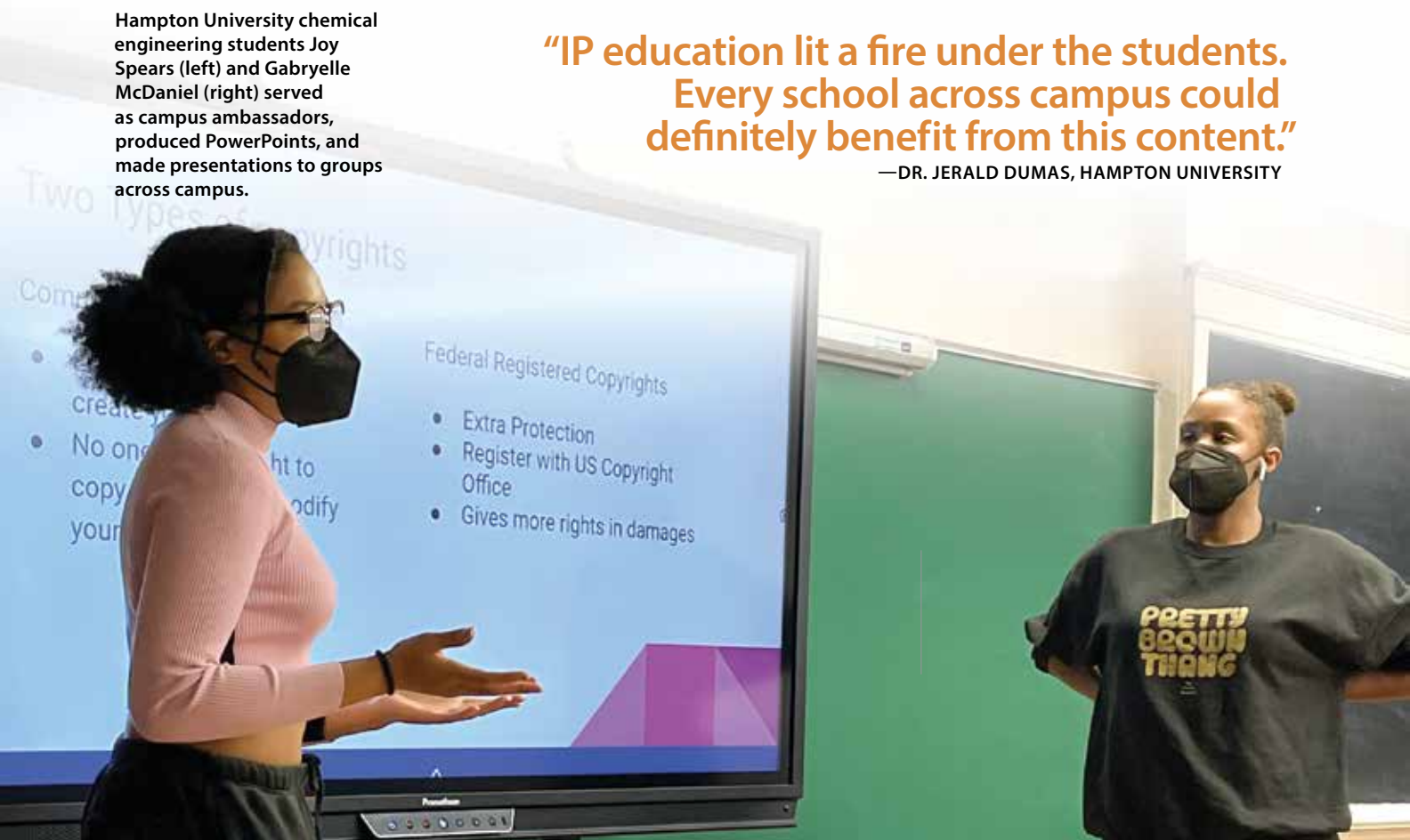
Morris summarized: "In the long run, I want to have a co-curricular, student-led program where we have people in all disciplines come out and talk about IP—attorneys, patent agents, the USPTO."

"I'd like to gather the entire institution and have a discussion about IP and what that looks like in your discipline. Everybody needs this." 🗣️

Hampton University chemical engineering students Joy Spears (left) and Gabryelle McDaniel (right) served as campus ambassadors, produced PowerPoints, and made presentations to groups across campus.

"IP education lit a fire under the students. Every school across campus could definitely benefit from this content."

—DR. JERALD DUMAS, HAMPTON UNIVERSITY



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Always Room for More

IS THE STALLED TECH MARKET TOO SATURATED FOR MORE INVENTIONS? IN A WORD, NO **BY DEVIN PARTIDA**

THE PACE of technological advancement has skyrocketed in the past few decades, creating a tech market that has arguably hit its glass ceiling. If someone were to ask random people on the street what the latest breakthrough invention was, the iPhone or smartphone would probably be the most popular answer.

No other innovations have been able to match the impact of the iPhone, socially or economically. Has the tech market finally become too saturated for another huge invention?

Not exactly.

The glass ceiling

Apple released the iPhone in 2007, changing the tech industry—and the world—like few technologies had before. In the almost 20 years since the first iPhone, few to no other inventions have had nearly the same economic or cultural impact.

Like the personal computer and the internet, the iPhone launched an entirely new market type and a new branch of technology. Another technology hasn't been able to do the same since the iPhone. Could developers have simply gotten used to a breakneck pace for technological advancement?

Data show innovation began to skyrocket only in the last hundred years or so, and gross domestic product along with it. For the rest of human history before the Industrial Revolution, new inventions were slow to come and delivered a much smaller economic impact.

A concept in physics, Moore's law, states computing power will double every two years, resulting in the exponential growth of humans' computing capability. At the same time, the price of computers will reduce by half every two years. Today, many people have begun to argue that Moore's law is dead

because the pace of computational advancement is slowing down.

This isn't an illusion. Tech seems to have hit the brakes, for now, on a few fronts: quantum computing, self-driving cars and general artificial intelligence. The problem any new invention faces today is the technology either already exists or isn't capable of existing yet.

Scientists haven't figured out how to make things like quantum computers and self-driving cars work. These are incredibly complex inventions—much more so than those in the past few decades.

So, what is the next big invention? Will there ever be one?

Virtual Reality?

In the film "Ready Player One," based on the book by Ernest Cline, humanity lived in a vast virtual reality world called the Oasis, where most spent almost all their time. A VR environment like this has become the dream of tech enthusiasts.

Such an expansive VR world could have a groundbreaking social and economic impact. In Cline's vision of the future, people even go to school and work in the Oasis.

Could VR be the next big tech breakthrough after the iPhone? This question has been floating around for years now—and there still doesn't seem to be an answer. VR headsets today have become widely available, largely thanks to Meta's relatively affordable Quest 2 headset.

But like many other supposed "next big thing" inventions, VR faces a computing issue. Games in VR only appeal to certain people and often still aren't even accessible to many, including people with disabilities and older people. New advances in computing and hardware are still necessary to take VR to the next level, but it's unclear whether the whole world will get on board.



After all, modern technology has reached a point where people can do almost everything online. Many still don't see what advantage VR offers over the current blend of the virtual and real worlds.

The final frontiers

So, is there still room for groundbreaking inventions in the tech market? The answer is a resounding yes.

However, the market and the world at large will need to get used to a slower pace of innovation.

These final frontiers of invention are the most challenging technological advancements humanity has ever pursued. Once these inventions finally come together, they could have a monumental economic and cultural impact. To wit:

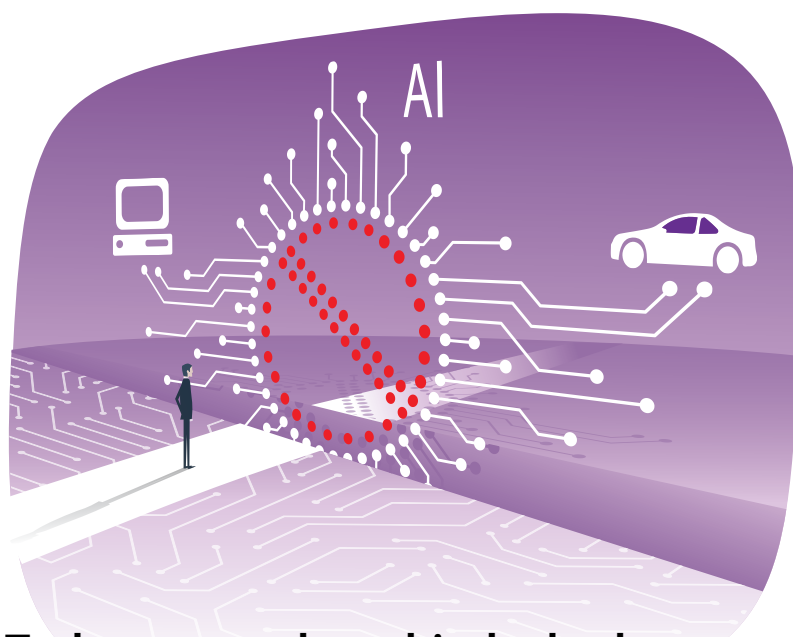
Space travel: Space agencies and private companies globally are planning missions to the moon and Mars for the 2030s—and even the late 2020s. Reusable rockets and the commercial spaceflight industry will have a massive impact on the world.

For example, scientists believe Helium-3 in moondust could be the key to clean energy. Voyages further into the solar system will also certainly spark development in peripheral technologies like VR, medicine, communications and 3D printing.

Medicine: Imagine if medicine could halt aging, conduct surgery with microscopic robots or cure cancer with a single treatment. Advancements like these could be the future of medical technology. If and when these inventions arrive, they will revitalize the tech market and change the world.

CRISPR gene editing technology is the beginning of this biotech revolution. Nanotechnology is also on the horizon in medicine, although it relies on computing advances that make semiconductors small enough for these microscopic medical robots.

Quantum computing: This will almost certainly be the next big turning point in humanity's technological capabilities. This technology takes today's semiconductors out of the



Tech seems to have hit the brakes, for now, on a few fronts: quantum computing, self-driving cars and general artificial intelligence.

picture entirely and makes computations using quantum mechanics instead.

While the likes of Google and IBM claim to have developed quantum computers already, they are still incredibly fragile and require carefully controlled facilities. There are still many challenges for quantum computing to overcome before it can truly reach its full potential in the tech market.

Promising future

The tech market is not permanently oversaturated. There is still plenty of room for new inventions to change the world and spark new demands of their own.

Humanity's technological capabilities have simply reached a point where the next new invention that could make that kind of impact is more challenging. It might take a while, but there will be another breakthrough, world-changing invention one day—maybe even sooner than people expect. 📡

Devin Partida is a freelance technology and innovation writer. She is also editor-in-chief of ReHack.com. You can find Devin on LinkedIn and devinpartida.com.



Whose Idea is it, Really?

FAMILY STORIES UNDERSCORE THE IMPORTANCE OF INVENTOR ORIGINALITY AND ETHICS **BY APRIL MITCHELL**

“IF YOU don’t get it on the market, someone will.”

If you are in the inventing industry, chances are you have heard this. I know I have. I have even had a couple people tell me they had the same idea as my Right Height adjustable over the door hook sometime after it hit the market.

Several times, I thought I had come up with a new and novel idea—only to find it on the market after some extensive research. There were even times when I started pitching a new concept, and around the same time a similar product became available.

Given the number of people in the world, this is inevitable.

There are countless scenarios and stories involving who invented a product versus who brought it to the market. I will share some stories from my family as well as some that I have personally witnessed and let you decide whose idea it really is.

My hope is that credit will be given where credit is due. I also hope that people will be inspired from an idea, take that inspiration, and turn it into something of their own instead of capitalizing on others’ ideas.

The men in suits

The old family story goes like this: My great grandfather, who tinkered and invented all the time, came up with a revolutionary invention that changed a certain sport for all time. He also made inventions to help improve cars for a large auto manufacturer.

He was always inventing. However, he never made one dime from his inventions.

He had a businessman friend who helped set up a meeting with people who could help with one of his inventions. As my dad recalls when he was very young, several men in suits came

to town to see my great grandpa’s invention displayed and in action.

My uncle and his friends showcased the invention’s abilities. The men took photos, measurements and notes. They left and were never heard from again.

Soon, the invention was on the market, intentionally stolen. My great grandpa did not file for a patent, nor did he have money to fight the knockoff artists in court. He had no knowledge of bringing a product to market, or of licensing one.

So officially, whose idea was this?

Whose tool is it?

My dad owns his own drywall business. He has been working in the industry since right after high school. After learning the trade, he branched off and started a business. He has done well for himself and my family.

He adapted one of his large tools to make his job easier and more proficient. It made a big difference for his work.

Eventually, the tool was manufactured and sold with this adaptation by another company, not my dad’s.

He did not set out to sell and monetize his adapted tool. He did not have the resources, nor the time or money, to perfect his prototype to be manufacturer ready. He did not feel it was worth the sacrifice of time it would have taken from his family.

My dad believes that success doesn’t always come from making money on something. Success can come from being able to make an idea into reality and seeing it through, knowing you had what it takes to make it work. I think this is a great perspective, one many creators and inventors share.

Could another drywall taper have come up with the same idea? Do they know who the



My uncle and his friends showcased the invention's abilities. The men in suits took photos, measurements and notes. They left and were never heard from again.

original inventor of this product is? Should my dad the inventor be compensated? Or should it be about the person(s) who got it on the market?

Inventing vs. stealing

We have all seen neat DIY projects, fun and creative ideas on social media.

People like to share photos of these with the world so other people can create and use them. They share these ideas instead of capitalizing via retail.

These ideas can easily inspire us to be creative, or maybe to take an idea and modify or evolve it in some way to make it our own.

In my opinion, that is creating or inventing: when someone takes something and changes it or evolves it the way I did with my Right Height hook.

Over-the-door hooks existed before Right Height; there is no debate about that. I add the adjustability to the hook so more people could reach the hooks.

What is not inventing is taking a neat DIY project or trend you see on a platform and manufacturing it or licensing it as if it was your own creation—and making all the money from it. I'm sure this happens more often than we think.

This upsets the mom, teacher, inventor, and sometimes DIYer in me. Inventors, we are all better than that!

What about the original inventor or creator? Whose idea is it, really? Is it the first person to make it and share it with the world, or the one

who gets it on the market? Could others have come up with the same idea and not known about it?

Learn the nuances

Is it possible that two or more people could unknowingly be working on the same invention/product at the same time? Absolutely!

Often, we hear it's about being first to market with an idea—and in fact, the 2011 America Invents Act changed the country from a first-to-invent system to a first-to-file system.

But yes, sometimes inventions get stolen, as in the story of my great grandpa. We as inventors must do our best to educate ourselves on the process.

Not all inventors do it for the money. Some inventions are made to help work become easier or better; some are made for the fun of it!

Use DIY projects and current trends as inspiration for your own ideas. Don't package them and claim them as your own.

Get your creativity flowing, be inspired, and enjoy inventing! 📌

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*.



The Home of the Brave

DEVELOPING YOUR PROTOTYPED PRODUCT ON YOUR OWN TAKES GUTS—AND THESE CONSIDERATIONS **BY JEREMY LOSAW**

PRODUCT DEVELOPMENT usually takes a team of talented people with finely tuned skills to hoist a concept off the napkin, ready for prototyping and into the hands of consumers. Product companies have teams of designers and marketers who work sometimes for years before putting a product on the shelf.

Although this is out of scope for the inventor, product development agencies can be a great way to bridge the gap and hire talented designers and engineers to shepherd the product through to production.

However, some intrepid entrepreneurs insist on taking on the burden of developing their product on their own. Here is some practical advice for those brave enough to go solo.

Budget

Even if you are saving money by not hiring out for development services, you still need a budget to build prototypes, travel to events to pitch or show the product, general business expenses, patent filings, and eventually mass production of the product.

Each product is different and based on a number of factors—including complexity of design, whether it is electrified, or how exotic the materials are. These will all influence how much the development will cost.

Know that it is common for many products to cost \$100,000 or more to bring to market. If you cannot provide that fuel on your own, you will need to do extra work to bring on investors.

Get feedback

Just because you are developing the product on your own does not mean you are exempt from getting feedback along the way.

It is crucial to show potential users what the product can or will do to ensure it is fitting a real customer need, and that it will be in demand when you finally sell it. This can be done informally with family and friends, or in a more prescribed setting with invited guests who are under nondisclosure agreements to review renderings or prototypes.

Designing in a vacuum can result in a product that will miss the target in the marketplace, and could add up to great expense and lost time.

Timeline

Know that developing a product solo will likely take longer than if you work with a team or a firm. A lot of micro-skills are necessary to design and build products that professional designers have the training and experience to do quickly.

Be prepared to have to train yourself to do things like CAD design, building prototypes, using a 3D printer, accounting, pitching, and marketing; you will need these and other crucial skills to apply to your own development program.

If you are designing a product that may have a short window for sales, it may be too much work to do as a solopreneur. However, if you are able to hone these skills and deal with the longer timeline, you will have a set of superpowers you can apply to future projects.

Have the right tools

It takes many iterative prototypes to get a product right, and it takes the right tools to build them effectively. Make sure you have a great set of tools and equipment either in your possession or at your disposal that are appropriate for your development path.

Many products will benefit from a suite of great hand tools and light machines; others will require high-end machining centers or 3D printers. In either case, you have to research



The Strataysys Origin One 3D printer is a good option for having the right tools.

which processes you are likely to use and make sure you have the right tools for the job.

If you need help, your local makerspace or toolshare is a great way to get access to, and training for, more advanced equipment that can help you on your journey.

Manufacturing

This is one of the trickiest and most costly parts of the process, so it is helpful to always consider manufacturing processes and costs along the way. Before you start working on prototypes, you should have a clear idea of the price range that you can sell your product for and know that you will have to make for less than that.

Ideally, you will be able to manufacture the product for four or five times less than the retail price to have a viable business. As early as possible, engage potential manufacturers to get estimates on the production costs so you can adjust or pivot your design to meet price targets.

Alibaba is a great way to find factories. Although most groups represented there are reputable, there are still bad actors out there. Protect yourself by reading the feedback thoroughly, talking to other customers for references, and making sure you have NDAs and/or patents in place before sharing any crucial information.

Know when to ask for help

As the late Kenny Rogers was known to sing: “Know when to hold ‘em. Know when to fold ‘em.”

Product development is a journey that is rarely without twists and turns. Appreciate that it is difficult to bring a product to market in the best of circumstances.

Going it alone compounds the difficulty. It is OK to stop and reach out for help. Even if it is only to get some renderings done or a prototype made, some professional eyes on the concept may unlock a valuable piece of information that can help propel you closer to market. 🍀

Know that developing a product solo will likely take longer than if you work with a team or a firm.





Build, or Buy?

HOW TO BEST GROW A PATENT PORTFOLIO **BY LOUIS CARBONNEAU**

W **E AT TANGIBLE IP** do a fair amount of strategic IP advisory work for clients, and I am often asked by management people whether they should invest in building their own patent portfolio organically or go the acquisition route and purchase patents that may get them what they need immediately.

You may have guessed that the right answer is usually: “It depends”—and most often ends up being “Do some of both.”

First, let’s compare approaches, which both have their pros and cons.

Building organically: Growing a patent portfolio organically, i.e., based on inventions made in house, is the general rule and the way most companies acquire assets. (This excludes NPEs or non-practicing entities, which hold patents with no intention of developing them.)

People invent first while doing research and development. The patenting part comes after, as a result of their innovations. Thus, the patents filed usually cover their core (and sometimes non-core) technologies with some of it productized down the road.

In this scenario, patents play a defensive role—i.e., preventing cloning or copying by competitors unless they want to infringe upon the company’s patents, which many choose to do anyway.

The obvious benefit of this approach is that the company protects technology that itself has developed and is connected directly to the products or services it sells. It also acts as a deterrent against competitors and as a tool for the company to attract funding, as it enhances its reputation as an innovative company.

It is generally considered a plus that the inventors are with the company and may remain available for improving upon the previous inventions, and when those patents need to be enforced. Actually, though, assertion activities often occur several years later; by that time, many of the original inventors may have moved on to greener pastures.

Also, only a small percentage of home-grown inventions ultimately get productized by their patent owners, and even product or services that embody their original inventions will evolve over time in a way that no longer overlaps with the patent portfolio. This may leave the company vulnerable.

Finally, filing a patent is always a gamble because the bulk of the work and investment precedes the result. Besides, there is no guarantee that the patent will even issue. If it does, there is no certainty that its coverage will be adequate and, finally, there is currently a relatively low level of confidence that it will remain valid if challenged.

Remember that in the United States, almost 75 percent of patents that are challenged before the Patent Trial and Appeal Board end up being declared invalid, or at least some of their claims.

However, the main drawbacks for building a patent portfolio organically are primarily time and money. It is both long and expensive.

The typical patent takes three years from filing to issuance and costs on average north of \$50,000 per patent, if you account for all issuance and

There are no bad reasons to acquire patents from others, so long as they fulfill a valid business objective.



maintenance fees. If the patent is filed internationally, which it should be, the investment per patent family can quickly exceed \$250,000 to cover a few additional markets.

Imagine the kind of budget a large corporate law department at a Fortune 500 company must have in order to manage tens of thousands of issued patents while filing a few thousand more each year. It is daunting.

Buying patents: On the other end of the spectrum, buying patents is a lot more opportunistic and accomplishes different objectives.

It may be that your own patents no longer overlap well with your product, and you need to fill some gaps quickly. Or that you plan on expanding in a new product line or territory and need freedom to operate on the IP front. There can also be a new technology that you want to add and for which you need the rights.

Finally, it could be that you are on the eve of a cross-licensing discussion and need to rapidly acquire assets that are relevant to the other party, or that you are being sued yourself for patent infringement and need some strategic patents to even the playing field in court, etc.

In short, there are no bad reasons to acquire patents from others so long as they fulfill a valid business objective.

Some of the advantages of the “buy” route map to the corresponding weaknesses of the organic approach above, the first one being time. It is like buying produce at the grocery instead of gardening: maybe not as gratifying, but a lot more efficient!

Second, there is certainty in the scope of patents—what they cover and do not cover. Third, you can better assess their ability to withstand challenges to their validity, as you can look at the prosecution history, prior art, etc. Fourth, although the price you pay per patent is likely to be higher than the ones you filed internally, you can review hundreds of those before selecting the one(s) you really need and thus avoid the cost of all those filings that go abandoned or do not really support the business over time.

Obviously, there are some drawbacks, too: You are only acquiring the rights to exclude others from practicing the inventions as claimed, so

there is rarely any enabling technology or know-how transfer in addition to these “naked” rights.

Second, and despite the best due diligence efforts you may endeavor, you will never know the whole story about the genesis of the invention, potential flaws in prosecution, whether too few or too many inventors were named, whether there was a public disclosure of the invention prior to filing the patent, what the inventors think about the patents, etc.

So when you need to assert those, you are throwing someone else’s grenade—and surprises abound in patent litigation once you subject patents to a tougher scrutiny.

Nevertheless, successful operating companies regularly engage in acquiring third-party patents in addition to having a vibrant organic patent portfolio building effort. They also divest patents they no longer need and reinvest the money into making their portfolio more relevant to their business. ☛

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.



BLACKBERRY DEAL IN TROUBLE

We discussed a few months ago the Blackberry patent portfolio sale in detail and warned that it could unravel, should part of the funding that was a requisite for the deal to close fail to materialize. We felt then that the announcement was a bit premature; recent events seem to confirm this.

According to a statement released by the Canadian company on June 1, the prospective buyer, Catapult IP Innovations, has failed to raise the missing cash (\$150 million) to close on the deal.

Blackberry is now out of the exclusivity window to explore other avenues, but this comes as a major setback and embarrassment for CEO John Chen—who rushed the announcement of the sale several months ago to meet a self-imposed deadline with investors. It also goes against the well-known rule among patent brokers that a deal is never closed until the funds are in your bank account.





Logic Gets the Shaft

SCOTUS' REFUSAL TO HEAR APPEAL OF FEDERAL CIRCUIT'S BIZARRE RULING CRIPPLES PATENT ELIGIBILITY **BY GENE QUINN**

All Eye On Washington stories initially appeared on IPWatchdog.com.

THE SUPREME COURT recently refused to hear yet another patent eligibility appeal. I've lost count of how many times the court has refused to provide clarity to the fundamental question of patent eligibility since it last muddled the waters with the software-unfriendly *Alice* decision in 2014. I stopped counting several years ago, when the number of petitions—pleas begging for help, really—crossed over 50.

But the petition in *American Axle* was supposed to be different.

Yes, the U.S. Court of Appeals for the Federal Circuit has been hopelessly and helplessly split for years—a division and impotence of its own making. But in *American Axle*, the federal circuit actually ruled that a drive shaft is not patent eligible because the operation of the drive shaft fundamentally relies on Hooke's law.

(Editor's note: *American Axle* & Manufacturing, based in Detroit, sought to revive its patent on technology for quieting drive shaft noise. Hooke's Law is a principle of physics that says the force needed to extend or compress a spring by some distance is proportional to that distance.)

The precedent pratfall

Although the Supreme Court not hearing *American Axle* does not mean the court agreed with the federal circuit ruling, the failure to overrule the federal circuit does leave that decision as precedent.

The value of precedent is difficult to say when opining about the federal circuit. As even casual observers understand, its judges do what they want, regardless of precedent.

There will be cases in which federal circuit panels claim they now feel compelled to apply the idiotic ruling in *American Axle*. We will be

told they have no choice but to find invention after invention patent ineligible because that is what the Supreme Court mandated.

Not to put too fine a point on it, but a full, fair and impartial application of *American Axle* renders everything patent ineligible.

You simply cannot invent anything that is not fundamentally based on scientific law. Even the Supreme Court understood that much when the court tried to warn the federal circuit in *Alice* that “[a]t some level, all inventions embody, use, reflect, rest upon or apply laws of nature, natural phenomena, or abstract ideas.”

Yet here we are where Hooke's law, which describes the force needed to compress a spring, renders a drive shaft patent ineligible.

The federal circuit has ignored the Supreme Court's warning that every invention embodies, uses, reflects, rests upon or applies scientific laws. In fact, so tortured and bizarre has the evolution of the law of patent eligibility become that it is probably best summarized thusly: Every invention that embodies, uses, reflects, rests upon or applies scientific laws is patent ineligible. That all inventions so relate to scientific laws, natural phenomena, or abstract ideas is merely an inconvenient truth.

Consider the implications

But rather than speak in the abstract, let's discuss innovation in concrete terms—and consider the ramifications of a federal circuit that has intentionally neutered itself and a Supreme Court unwilling to step in despite near judicial incompetence on the issue of patent eligibility over the last dozen years.

For example, Snell's law is used to describe the relationship between angles of incidence and refraction when referring to light or other waves passing through a boundary between two different media. Snell's law is fundamental to innovations ranging from contact lenses to fiber

optics, all of which are presumably patent ineligible as the result of *American Axle*.

So, too, are wide swaths of green technologies, such as those that relate to the collection of solar energy. U.S. Patent No. 9,033,525, titled *Optimum solar conversion cell configurations*, and patented by NASA, specifically references Snell's law in the claims.

Another example of a patent ineligible claim that is fundamentally reliant on Snell's law is U.S. Patent No. 10,671,158, titled *Three-dimensional (3D) rendering method and apparatus for user's eyes*, patented by Samsung, which includes in the broadest claim the step of calculating a value using Snell's law.

Obviously, these are but two easy, incontestable examples given that the claims specifically and fundamentally rely on a scientific law. The ubiquity of Snell's law will render hundreds of thousands of optics related patents void if *American Axle* is actually applied as written.

The invention in question has always been the type of invention that has historically been patent eligible. Yet, nothing is going to be done, and at least half of the judges on the federal circuit—perhaps more—will now apply the ruling without thought or consideration.

Patent eligibility in America is a train wreck. Those with the power to do something either created the problem and are choosing to ignore it (i.e., the Supreme Court), made the problem worse by applying decisions and statements out of context (i.e., the federal circuit), or ignore the problem like a bunch of ostriches with heads firmly planted in the sand because patents are a losing political issue unless everyone agrees on everything (i.e., Congress).

Toxic turf war

If the Supreme Court denied *American Axle*, is foolish to think it will take any case—particularly after the solicitor general advised taking this case now. The federal circuit has said repeatedly it is not going to fix anything because it wants the Supreme Court to take action, which simply won't happen, so the industry is now held hostage by a bunch of judges and Justices in a turf war.



A full, fair and impartial application of *American Axle* renders everything patent ineligible. You simply cannot invent anything that is not fundamentally based on scientific law.

Patents do not drive voters to vote, but as an issue they can and do animate donors who get upset when the wrong thing is done. So, Congress won't act any time soon.

It is probably time for innovators to give up on the charade of patent protection in America and look elsewhere in the world, where patents matter. File patent applications using the Patent Cooperation Treaty, enter the U.S. national stage as late as you possibly can, and drag out prosecution as slowly as you can.

Meanwhile, pray that the Supreme Court, federal circuit or Congress comes to their senses. But for goodness sakes, don't hold your breath! ☹

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.





E-learning Inclusion

INVENT TOGETHER, QUALCOMM TEAM FOR NEW ACADEMY TO HELP INVENTORS FROM DIVERSE BACKGROUNDS

BY STEVE BRACHMANN

IP DIVERSITY advocacy group Invent Together announced in July that it launched an online learning platform known as The Inventor's Patent Academy.

TIPA is an e-learning course designed in collaboration with Qualcomm to educate inventors from diverse and underrepresented backgrounds about the benefits of engaging with the U.S. patent system. The online academy is the latest of several efforts by Congress and patent system stakeholders in recent years to unlock the innovative potential of women, people of color, low-income inventors and others to benefit the U.S. economy.

Background

Studies published by national patent offices in recent years have underscored the uphill battle female inventors have faced in becoming part of the global inventor community.

In February 2019, the U.S. Patent and Trademark Office issued a study on female inventors showing that as of 2016, only 21 percent of

patents listed any female inventors and only 4 percent of patents issued between 2006 and 2016 listed only female inventors.

An update to this study published in July 2020 by the USPTO found that the share of female inventors among inventor-patentees increased slightly between 2016 and 2019 but still was only 12.8 percent in 2019.

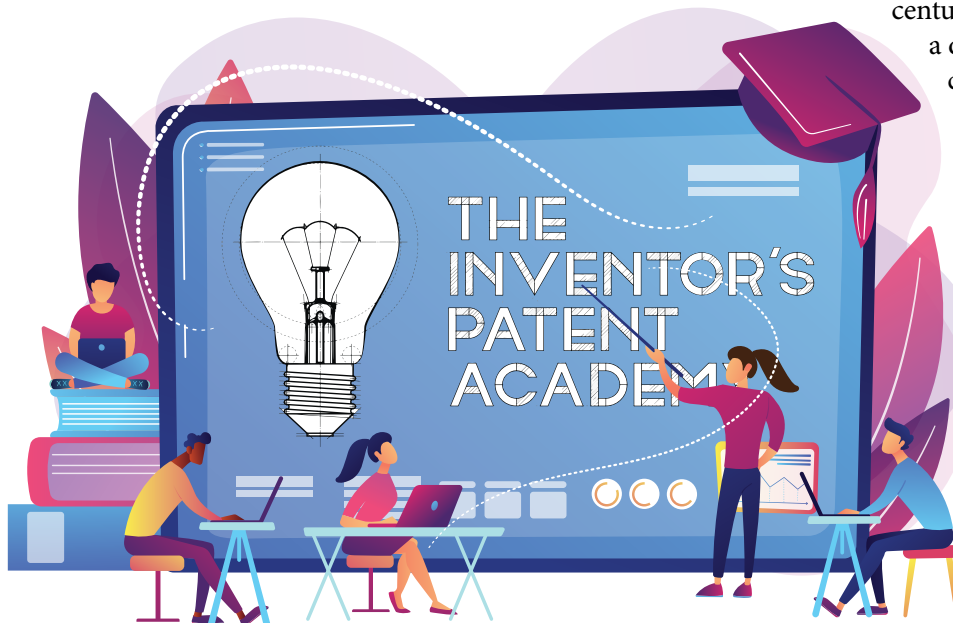
A low rate of female inventors is also reflected by studies in other countries, including an October 2019 study published by the UK Intellectual Property Office showing they account for less than 13 percent of patent applications filed globally.

Several statistics published online by Invent Together show the battle faced by inventors from low-income or underrepresented backgrounds.

While nearly 1.8 percent of white college graduates apply for patents or own patents during their lifetimes, only 0.8 percent of black college graduates and 0.9 percent of Latino college graduates reach the same milestone.

According to Invent Together, the patenting rate among black inventors peaked more than a century ago in 1899 and has experienced a downward trend since. Family financial stability is also a major indicator of patenting activity, as individuals born into families within the top 1 percent of income are 10 times more likely to own a patent in their lifetime than those individuals born into families in the lower 50 percent of income.

If Black/Indigenous/People of Color (BIPOC) and female inventors engaged in the U.S. patent system at the same rate as their white male counterparts, Invent Together reports this increase to domestic innovation would add \$1 trillion to the U.S. economy every year.



3 TIPA modules

According to information provided by Holly Fechner, executive director of Invent Together, the TIPA e-learning course consists of three separate modules. Each takes from 90 minutes to two hours to complete, although the program is designed for students who want to finish the course at their own pace.

- The first module covers foundational aspects of the patent system, including an overview of IP rights as well as methods for overcoming systemic challenges.
- The second provides an overview of patent law—including parts of a patent, inventorship, types of utility patent applications and patent timelines.
- The third takes a deeper dive into advanced topics, including patent claims, office actions and post-issuance considerations.

Many of the video segments recorded for the TIPA program feature inventors from underrepresented backgrounds who have successfully navigated the U.S. patent system.

Fechner said Invent Together plans to leverage its network of 20 member organizations—including the Association of American Universities, Qualcomm, the Lemelson-MIT Program, Boston University and the Association of University Technology Managers—to conduct the outreach necessary to ensure members of underrepresented populations are engaging with TIPA.

According to Sudepto Roy, VP of engineering at Qualcomm and TIPA program lead, there are a tremendous number of innovative individuals the e-learning program could be targeting.

“It is estimated that millions of potential American inventors from underrepresented groups are not inventing or patenting,” Roy said. “The lack of tailored information about the patenting process coupled with the financial barrier to entry prevents many inventors from patenting their inventions.” 📧

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



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Best wishes, Jack Lander

IoT Corner

Researchers at Carnegie Mellon University have uncovered a system for detecting hidden cameras and other WiFi devices.

Lumos can sniff out and locate incognito devices that may be nefariously installed in hotel rooms or AirBnB units. The system can find encrypted wireless packets and use signal strength data to triangulate the location of a potential threat.

Lumos and its machine learning algorithm has been tested with 44 different IoT devices and has proven 95 percent accurate in locating hidden devices in a testing environment. Should the research mature into a real product, it would provide an extra level of security for travelers. —*Jeremy Losaw*



Wunderkinds

Anna Du was 12 when she walked the beaches near her Andover, Massachusetts, home to collect plastic bags and bottles. She noticed many tiny plastic pieces—or microplastics—that were impossible to pick up, so she invented a Remotely Operated Vehicle that uses an infra-red camera to detect microplastics on

the ocean floor. She won awards at top science fairs and is a nationally recognized advocate for microplastics awareness and pollution prevention. Now 16, she is releasing a new book to help spread the word about microplastics.



What IS that?

This kit claims you will be able to harvest gourmet mushrooms in 10 days, with a 100 percent guarantee. Most of the consumer comments were positive, but we loved this obviously unedited one: "I bought this as a gift for my wife as a gift and it was a total dude!" In that case, add beer, not water.

60% The percentage of school apps that share students' personal information with third parties such as Google, Facebook and Apple, according to the nonprofit Me2B Alliance.



WHAT DO YOU KNOW?

- 1 True or false:** A copyright can protect an idea.
- 2** Abraham Lincoln—the only president to be granted a patent—called his invention:
 - A) Rail-Splitting Apparatus
 - B) Rudderless Boat
 - C) Self-Supporting Bridge
 - D) Buoying Vessels Over Shoals
- 3 True or false:** Harpo Productions, Oprah Winfrey's company, has a registered trademark for "Aha! Moment."
- 4** In which decade was the computer mouse invented—1950s, 1960s, or 1970s?
- 5** Which entrepreneur said this about not putting much value in patents? "Our primary long-term competition is China. If we published patents, it would be farcical, because the Chinese would just use them as a recipe book."
 - A) Mark Cuban
 - B) Jeff Bezos
 - C) Elon Musk
 - D) Sophia Amoruso

ANSWERS: 1. False. Copyright applies to a recorded work, not something as intangible as an idea. 2. U.S. Patent No. 6,469 was granted on May 22, 1849. A replica of Lincoln's scale model appears at the Smithsonian Institution in Washington, D.C.; the Smithsonian acquired the original patent model in 1908. 3. True; mark registered in 2010. 4. In the 1960s, by Douglas Engelbart (see June 2016 *Inventors Digest*). 5. C.

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