IN COOPERATION WITH Intellectual Property Owners Education Foundation

AUGUST 2025 Volume 41 Issue 08

Inventors DIGEST

FINE FELLOW

HONORING THOMAS NOSKER, INVENTOR OF MULTI-USE RECYCLED PLASTIC LUMBER

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BACK TO SCHOOL?

IP MADE EASY

This August, as students sharpen pencils and minds, **IPO Education Foundation** is launching **IP Made Easy**, a tutorial that makes intellectual property exciting and accessible.

Know a teacher guiding young inventors, a parent of a curious creator, a college student with a side hustle, or a first-time entrepreneur with a big idea? This fun, engaging, and totally digestible tutorial is for them.

Packed with real life stories, surprising examples, and zero legal jargon, it's the perfect starting point for anyone new to intellectual property.

IP Made Easy, your IP tutorial to discover how intellectual property is everywhere and why it's worth protecting and teaching.

Check it out at IPOEF.org!

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Focus on the Fun and Fascinating

Keep Up on Your Patent Landscaping

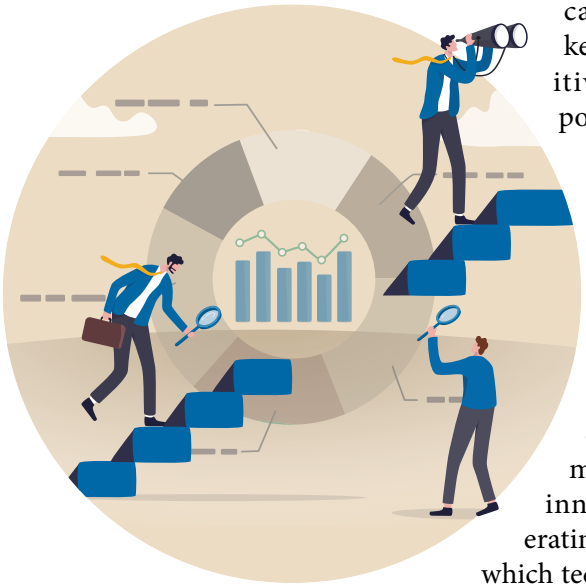
Crucial strategy involves searching, analyzing, visualizing existing patents to identify gaps and chances to find possible partners—and competitors

It's not just for your yard anymore. Patent landscaping, a term once familiar only to the largest corporations, is quickly becoming an essential tool for independent inventors seeking to innovate and compete in today's fast-paced market.

But what exactly is patent landscaping, how do major companies employ it, and why should individual inventors make it part of their business planning?

Seeing a bigger picture

Patent landscaping is the process of searching, analyzing and visualizing existing patents in a field of innovation to gather critical insights about key trends, competitive activity and potential gaps in the market. A patent landscape report often includes graphical maps and charts that reveal which areas are crowded with patents, what companies are most active, where innovation is accelerating, and potentially which technologies are still relatively unexplored.



For large companies, patent landscaping is a cornerstone of intellectual property strategy. Multinational corporations invest significant resources into regular patent landscaping exercises. They use these analyses to:

- Monitor their competitors' patent filings and try to predict R&D directions;
- Identify technological areas with little or no patent activity to see where new inventions might face fewer legal or commercial obstacles;
- Inform product development and avoid infringing on existing patents, thereby reducing the risk of costly litigation;
- Assess the value of their own patent portfolios and uncover opportunities for licensing or selling dormant patents.

By understanding the global patent landscape, companies can make informed choices about where to invest, what to invent, and how to protect their innovations most effectively.

Pluses for solo inventors

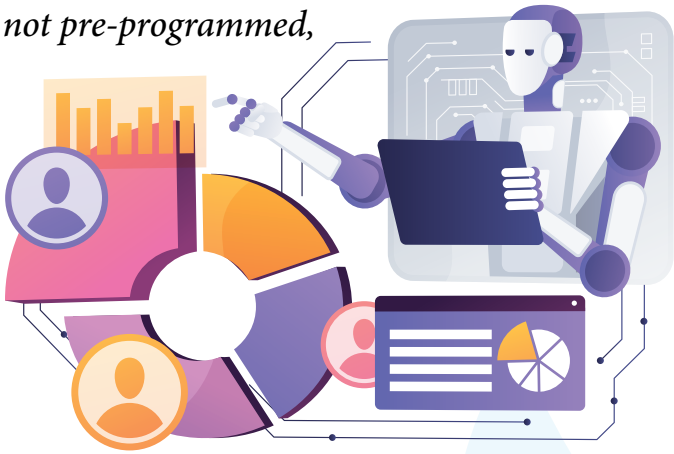
Patent landscaping may sound complex, but its benefits are no less significant for the independent inventor or small startup. For independent inventors, patent landscaping can:

- Reveal if an idea is truly novel by identifying "white space," or if the field is already crowded. That can help them decide if they should invest, or how much to invest in an idea.
- Highlight potential partners or competitors. For smaller companies and inventors who are experts in their field but who would rather find a licensing partner with more capital, this can be helpful.
- Help in crafting stronger, more defensible patent applications by identifying white space.
- Guide business planning by showing which areas are saturated and which might create opportunity.

Incorporating patent landscaping into business planning increases the chances of developing unique products, and reduces the risk of costly infringement disputes or wasted investment cycles. It empowers inventors to make smarter, more strategic decisions—leveling the playing field with larger players and boosting the odds of commercial success.

Discover Agentic AI

Advanced form of artificial intelligence, not pre-programmed, can analyze, plan and adapt on its own



In today's rapidly evolving technological landscape, small business owners and independent inventors are constantly seeking new ways to streamline operations, boost innovation and mitigate risk. One emerging concept with significant potential is "agentic AI."

Agentic AI refers to artificial intelligence systems designed to act autonomously, making decisions and taking actions to achieve specific goals within set parameters. Unlike traditional automation, which follows pre-programmed instructions, agentic AI can analyze situations, set objectives, plan steps and adapt to changes—acting on your behalf.

Examples of agentic AI include digital assistants that schedule meetings automatically, AI tools that negotiate contracts, or intelligent platforms that optimize supply chains by adjusting routes and orders in real time. If you and your luggage ever took different routes to the same destination during air travel, you might have experienced this!

Help for the 'little guy'

Agentic AI offers several practical applications for small businesses and independent inventors. It can simulate different business scenarios, projecting how strategies might play out under various conditions. It can analyze market trends, competitor behavior and consumer preferences, enabling you to make data-driven decisions for product launches or market entry.

Especially important for inventors, agentic AI could be used to help validate the concepts and specific features of an invention or idea. Before investing in an invention or product, agentic AI can help assess demand, predict costs, and estimate returns. By running virtual experiments and "what if" analyses, it can highlight potential pitfalls and opportunities, saving valuable resources.

Most applications of agentic AI that any of us will engage with first will be related to basic operational tasks, such as customer support. These AI agents can automate repetitive tasks (like order processing or inventory management), freeing your team to focus on creative or strategic work.

Reducing risk

One of the greatest challenges for innovators is overcoming uncertainty.

Will a new idea succeed? Is a business plan robust enough to weather shifting conditions.? Agentic AI excels at reducing such risks in several ways:

- **Scenario modeling.** By simulating multiple market and operational scenarios, agentic AI helps you anticipate outcomes and plan contingencies.
- **Continuous learning.** These systems adapt as new data become available, updating their recommendations and strategies over time.
- **Early warning systems.** Agentic AI can monitor key metrics and alert you if a project veers off course, letting you intervene early.

Agentic AI solutions can be a force multiplier for small businesses and independent inventors. As AI becomes more embedded in nearly all aspects of our lives, it can be beneficial to understand how agentic solutions work and how they can be leveraged to reduce risk, lower costs and capitalize on opportunities.

Learn more at **fluidityiq.com** or **linkedin.com/company/fluidityiq**.

'New and Improved' Is Old and Still Viable

Tom Fishburne is a smart guy. He's certainly innovative as the founder and CEO of Marketoonist, a content marketing studio that helps businesses reach their audiences with cartoons.

Always on top of market trends, he wrote about a yogurt brand that downsized its product from 8 ounces to 6 ounces a few years ago but kept the price and packaging size the same.

"The 'new and improved' benefit? The package now promised 'room for your favorite mix-ins.' It was framed as an 'improvement' to exchange yogurt for air."

Like many marketing veterans, Fishburne takes a dim view of the old-as-dirt, "new-and-improved" approach to marketing an invention or product. (And technically, the term is an oxymoron—because if something is here for the first time, it can't be an improvement.)

"If a brand has to shout that it's 'new and improved,' it's probably not all that new or improved. 'New and improved' is the easiest and lamest of marketing claims. Marketers use it to create new spin on an old brand, but it's often not much more than label deep. It's the least interesting marketing lever to pull."

Well ... take a swift gander at the facing page of this magazine for a dramatically compelling counterargument.

Taylor Swift's re-recorded "Taylor's Versions" of previous albums, conceived to control the rights to more of her work, have been successful in an unprecedented way. They are new creations—and given sales figures that exceed the original versions, likely improved.

For better or worse, consumers are often intrigued by purportedly improved follow-ups, even when costing them more money. Scheherazade Daneshkhu wrote in *The Financial Times* that "A 'new and improved' product can help take market share off rivals and boost profit margins through higher prices."

"New and improved" is a familiar practice on television. The iconic 1970s "Match Game" game show was a hip, updated version of the 1960s original with the same host. The original crime series "Hawaii Five-0" (1968-80), returned 30 years later with an entirely new cast and had a 10-year run.

One of the most exciting things about inventing is the ability to create new opportunities for our creations. If we are innovative and visionary, those new ventures can sometimes even come from old standbys.

—Reid
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Inventors DIGEST

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CORRESPONDENCE

"Game Design Tutorial"

(July 2025)

What a fantastic, generous breakdown of the entire creative and pitching process!

I love how you emphasize that designing a game isn't just about having an idea but about crafting an experience through testing, iteration and truly understanding mechanics. Your analogy of playtesting as editing a school paper is so clear and relatable!

Thanks for sharing these practical, real-world steps. It demystifies the journey for aspiring designers. —**NORMAND TURCOTTE**

Editor's note: Regular contributor April Mitchell's tutorial was the most comprehensive how-to for aspiring game inventors and designers that has ever appeared in *Inventors Digest*. If you are interested in learning more, she co-leads


MEANT TO INVENT

Game Design Tutorial

AWARDED PRO PROVIDES STEP-BY-STEP PROCESSES AND STRATEGIES FOR INVENTING A GAME BY APRIL MITCHELL

Games are typically started in one of two ways—from a name or theme, or specific game mechanics.

a Tabletop Game Design Masterclass that she co-designed with Ed Gartin, another veteran in the toys and games industry. *thetoycoach.com/tabletop-game-design-masterclass*

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HAPPY SWIFT TO RELEASE 'TAYLOR'S VERSION' NO. 5?

After resolving one of the most publicized copyright disputes in pop culture history, Taylor Swift says she has re-recorded her debut album.

"Taylor Swift" is the fifth of six "Taylor's Version" albums the pop superstar planned to release after she lost the master recordings to the original albums following the sale of her former label, Big Machine Records. She announced on May 30 that she had purchased that catalogue of recordings from their most recent owner, private equity firm Shamrock Capital, for an undisclosed amount.

"All of the music I've ever made now belongs to me," she said on her website.

There is no release date for the Taylor's Version of the 2006 debut album.

As for her sixth studio album, 2017's "Reputation," she said she had not re-recorded a quarter of it. She said she "kept hitting a stopping point."

Her re-recorded albums make an estimated $8.5 million a month in streaming royalties alone, according to industry sources.

Swift is the first major artist to re-record his or her catalogue. The decision could have played a role in her eventually reaching a deal with Shamrock Capital—which, due to the massive success of her Taylor's Versions, was now holding Swift recordings of lesser and possibly declining value.

She also has strategically staggered the release of each Taylor's Version, treating each as a major event and building anticipation.

CORRECTION: Reader Robert Root-Bernstein discovered an error in the USPTO story "The Umbrella Pops Up" (April 2022). Hans Haupt did not patent a pocket umbrella in 1915 in the UK. He did not do so until 1934, and it was in Germany.

INVENTING 101

Fast-tracking Your Patent Application

BY DON DEBELAK

ALTHOUGH the United States Patent and Trademark Office has recently worked to speed up the examination process for all patents, it is not uncommon to get a first office action—the patent office's response to your patent application—two years after an application is submitted.

Still, the USPTO has programs to expedite the application process.

The first program is a Petition to Make Special either because of age (must be 65 or older), health problems or other factors. It doesn't cost any additional money.

My experience in filing patents with a Petition to Make Special is that the first office comes around 6 months after filing. More details: **www.uspto.gov/patents/apply/petitions/23-make-special-age-and-health**.

Another USPTO program is a Track One Prioritized Examination, which promises a 12-month first office action response. Again, my experience in filling these applications is a first office action in about six months. (Editor's note: On July 7, the USPTO announced it is increasing the number of Track One requests that may be accepted in a fiscal year from 15,000 to 20,000.)

VITAL VOCABULARY

prior art This refers to all publicly available information about inventions that exist at the time you file your patent application. More specifically for your invention, it is any evidence that your invention is already publicly known or available, in whole or in part, before the effective filing date of your patent. A prior art search is a must for any new invention idea, before time and money are invested in protecting and commercializing it.

The cost of Track One applications is high—for large entities $4,515; small entities $1,806 and micro entities $902 (effective January 19, 2025). There are many USPTO rules on small entities and micro entities, but generally if you have 500 employees or fewer you are a small entity. If your income is less than $241,830 (today—it changes every year) and you have fewer than five patent applications (not including provisional applications), you are a micro entity.

If you file electronically, filing a Track One application is easy via **www.uspto.gov/patents/apply/forms**. You also need to file the USPTO form PTO/A1A/424.

Check the USPTO website for all rules, or call the USPTO Inventor Assistance Center at 800-786-9199.

Why expedite?

You can't sue anyone for infringement or file a complaint with a retailer or internet seller without a patent.

Amazon does have a program called APEX (Patent Evaluation Express) to address patent infringement on its platform. But that doesn't come into play if you don't have a patent.

Also, people will not know what your patent will end up looking like until you actually have a patent. A common number I've heard from multiple sources is that only 10 percent of patent applications receive a notice of allowance (which means your patent is approved if you pay the issue fee) without at least one office action being filed. (An office action is an objection filed by the examiner, often listing previous patents, which often require an amendment to the patent application.)

Often these amendments have to limit the scope of the patent, which makes it less broad—which is why it is difficult to license a product

'Poor Man': Poor Protection

REGISTRATION with the U.S. Copyright Office is not a requirement for copyright protection. This may be surprising to some, to the point they try to circumvent the (usually) modest fees to create a "poor man's copyright."

The term is aptly named, because it's a poor idea if you want to enforce that copyright.

This attempt to "game" the system goes like this: You put your tangible work into an envelope, mail it to yourself through the United States Postal Service, and it comes back to you with a postal date stamp in your sealed envelope.

So you have some kind of proof of ownership—except that it will be virtually worthless if you want to defend against infringement.

The U.S. Copyright Office says: "There is no provision in the copyright law regarding any such type of protection, and it is not a substitute for registration."

Common sense dictates why the poor man's copyright is a weak source of protection in infringement cases: It's very easy to fake. There is no verifiable evidence the contents inside the envelope have not been unsealed and/or swapped at a later date.

In addition, this method offers no protection against fire or natural disasters. And if your work is on electronic media, there is no protection against the media becoming unreadable over time. Registered works are backed up regularly to protect against media degradation and stored across geographically separated locations.

Although a poor man's copyright is not illegal, it's an attempt to beat the system that can be a losing hand.

without a patent. People don't know what your patent will end up being.

Here is an example of what can happen with a claim in a patent application for a sewing method that shows how a patent application can change before becoming a patent.

If the method "is using a needle, with a stitching process," that claim is broad. But if the steps are "using a needle with a barbed hook and cross X stitching pattern with each stitch no more than two mm apart from another stitch," you have a much narrower patent.

The broad claim is unlikely to get approval, as there is a lot of prior art. The second claim would have a better chance.

Don Debelak is the founder of One Stop Invention Shop, offering marketing and patenting assistance to inventors. He is also the author of several marketing books. Debelak can be reached at (612) 414-4118 or dondebelak@gmail.com. Don's Facebook page: facebook.com/don.debelak.5.

FREE ONLINE HELP

AUGUST 09

Register for "Successful Inventing: Marketing and Advertising," a virtual event August 9 presented by the United States Patent and Trademark Office and the Licensing Executives Society-Silicon Valley Chapter.

The session, from 1:30 to 3 p.m. ET, focuses on early-stage funding and informal planning, with topics including preliminary marketing and advertising; the value proposition of the message and the media; distribution options; wholesale and retail outlets, and internet and online strategies.

Details: **www.uspto.gov/about-us/events/successful-inventing-marketing-and-advertising**

GOOD TO KNOW

Beginning July 10, 2025, the USPTO no longer accepted petitions under the Accelerated Examination program for utility patent applications. The program will remain in effect for design applications, which do not have an alternative expedited examination program.

Discontinuing Accelerated Examination for utility applications frees examining resources to be devoted to older, unexamined utility applications, supporting the USPTO's efforts to reduce pendency. The program was recently receiving a smaller, declining number of petitions.

Rim Shot

INVENTION OF THE BREAKAWAY RIM PROTECTED WRISTS, OPPONENTS AND BACKBOARDS

BY REID CREAGER

WHEN RESEARCHING the origins of the breakaway basketball rim, everyone knows the first place to look.

NBA.com? Nope. The National Inventors Hall of Fame? Air ball.

C'mon. It's as obvious as a pivot foot drag, three-step layup or running-like-a-full-back slam dunk that a referee refuses to call: FarmWeekNow.com.

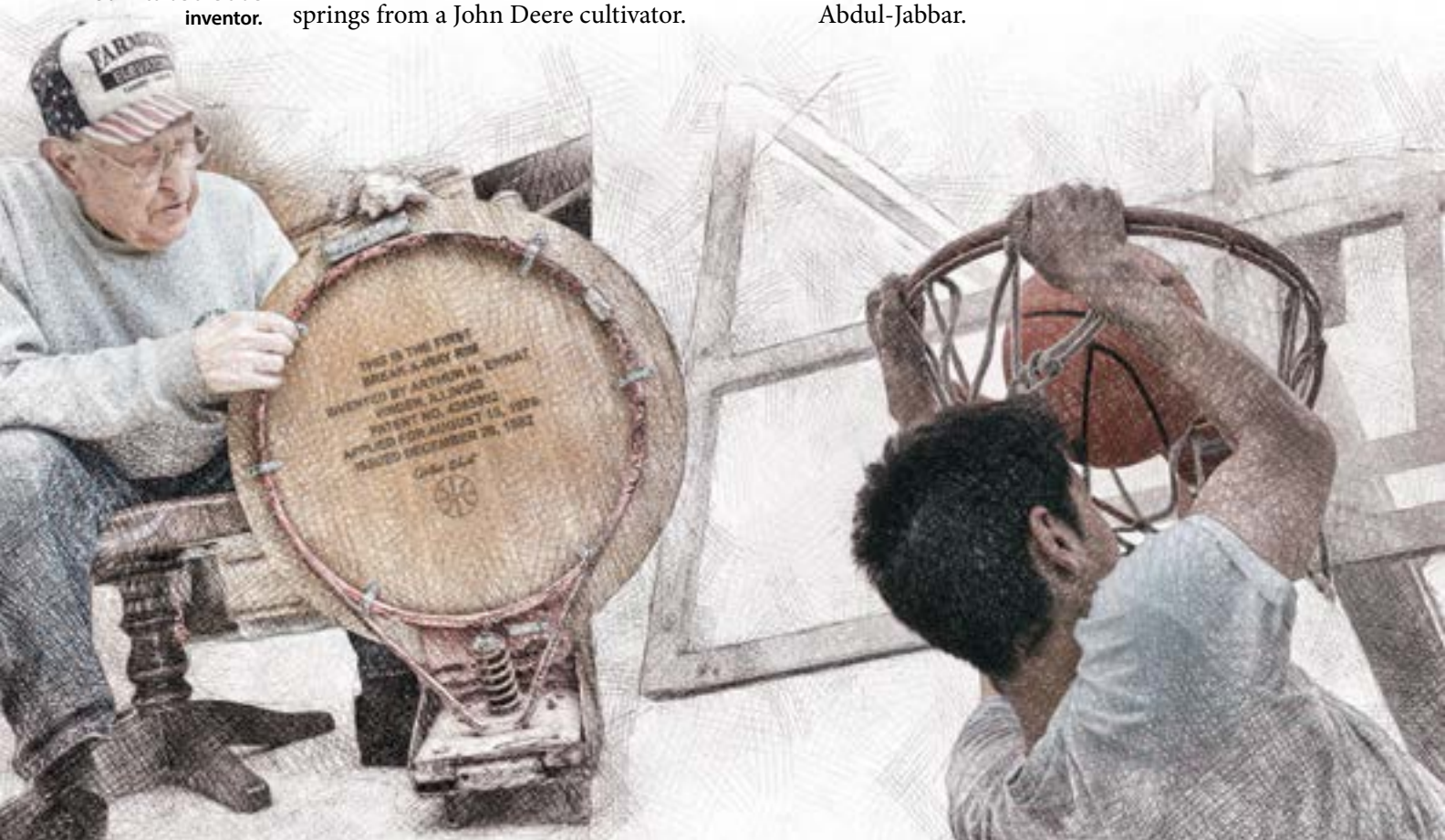
Kay Shipman told the improbable story of Arthur Ehrat, a farmer and grain elevator worker well known in Virden, Illinois (current population 3,231) for managing the former Farmers Elevator Co. for 30 years and inventing two field spreaders. The main features of his breakaway rim invention, which celebrates its 50th anniversary next year, are a hinge and coil springs from a John Deere cultivator.

The history of inventing teems with similarly inspirational, impactful discoveries from the most unlikely sources. But few of these success stories are as simple as a free throw. Ehrat's is no different.

Road to the dunk

The evolution of basketball created the opportunity for his invention. For decades after the game was conceived by James Naismith in 1891 (see March 2017 *Inventors Digest*), dunking a basketball was largely viewed as ungentlemanly, among other negative things. The first dunk in organized sport didn't come until 1936, at the Berlin Olympics.

Then came an unstoppable 7-foot-2 force named Lew Alcindor, later known as Kareem Abdul-Jabbar.



Smalltown Illinois farmer Arthur Ehrat, who filed his patent application in 1976, didn't get approval until the end of 1982—with NBA star Darryl Dawkins destroying backboards with his slam-dunks in the interim. Several others claim to be the true inventor.

Starting with the 1967 NCAA Championship Game (in which his UCLA Bruins beat Dayton, 79-64) and until the 1976-77 season, dunking in the NCAA was prohibited. The organization said a dunk was unskillful and presented injury risks—though many assumed the rule was implemented to prevent an unfair advantage for the towering Alcindor. The rule prohibited players from making shots above and directly over the cylinder.

The early 1970s emergence of Julius Erving in the American Basketball Association orchestrated a new era in pro basketball. Dr. J's spectacular aerial dunk displays made the play so popular and inspired such mid-air artistry that in 1976 the now-defunct ABA began a dunking competition as part of All-Star Game festivities. The rival National Basketball Association ultimately followed suit.

This soon proved more of a draw than the All-Star Game itself. Michael Jordan's air explosion into the NBA in the early 1980s further cemented the dunk as a signature play—even if players' added steps on the court to prepare for these air launches were often flagrant violations of the rules on traveling. The NBA and NCAA decided their leaping ratings and attendance were worth the trade-off.

Assist, John Deere

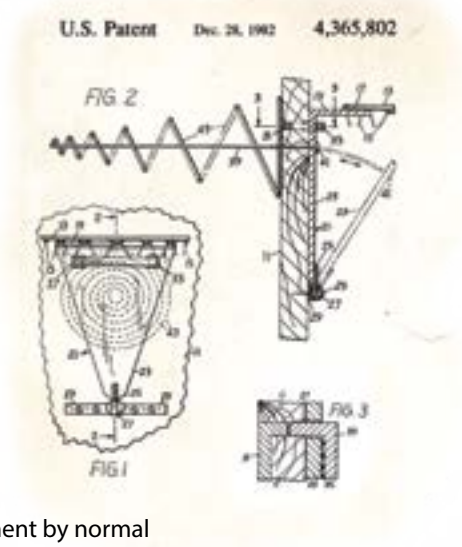
Ehrat didn't play basketball or even like it that much. But he loved watching dunks. More important, he was a problem solver who couldn't resist a challenge, especially when it was introduced by a family member.

Per Shipman's account, his nephew, St. Louis University coach Randy Albrecht, asked his uncle for ideas on how to make a rim that would withstand dunks without injuring players or destroying equipment. Ehrat's first notion was a spring that would let the rim snap back into place.

Car valve springs didn't seem strong enough. Ditto for car hood and trunk springs he tried—as many as 20 or 30.

A spring from a cultivator "had strength and quality," he said. "Lots of times other springs lost strength. That's why I tried John Deere. I thought it would be the right size and diameter."

PATENT PATHWAY



The Abstract in "Deformation-preventing swingable mount for basketball goals," **U.S. Patent No. 4,365,802**, states: "The mounting bracket for the ring of a basketball goal is yieldably swingably movable downwardly, or both downwardly and laterally, responsively to application of potentially deforming or damaging forces. Strong magnets or equivalent structure firmly hold the bracket against movement by normal game-applied forces. Pivotal movement is provided by a hinge or a ball-and-socket connector. A coil spring behind the goal backboard and connected to the bracket by a flexible cable, or a leaf or coil spring, can be employed to automatically return the temporarily displaced goal to its normal position."

Arthur Ehrat's application date was July 26, 1976. The patent was granted on December 28, 1982.

Strong magnets held up the rim but allowed it to fold down under pressure. The package was complete. Trials at local schools supported the weight and his prototype, called The Rebounder. He licensed it to 18 manufacturers.

The first use of a breakaway rim in the NCAA came during the 1978 Final Four in St. Louis. Traditional bolted rims were eventually phased out until the NBA made breakaway rims a required equipment upgrade.

A legal mess

The revolutionary rim's 1978 debut is particularly noteworthy, given that Ehrat didn't receive a patent until 1982—six years after he applied for it. This indicates not only an extended back-and-forth with the then-U.S. Patent Office but also a mountain of legal actions against perceived infringers.

The Arthur Ehrat Papers, in the National Museum of American History, house

A cultivator spring "had strength and quality," Ehrat said. "Lots of times other springs lost strength. That's why I tried John Deere."

correspondence and legal documents—such as patent papers, litigation files and licensing agreements—along with photographs and sketches relating to the invention. Among the exhibits is the first page of a licensing agreement with Basketball Products International of Seattle; the company and Ehrat were later plaintiffs in a civil action.

The papers show 52 results under Civil Actions and Settlement Records. One correspondence from a law firm retained by Ehrat mentions an ongoing suit as late as 1995.

INVENTOR ARCHIVES: AUGUST

August 22, 1952: The television show **"Adventures of Superman"** was copyright registered.

The syndicated show, which ran to 1958, was based on comic book characters and concepts that writer Jerry Siegel and illustrator Joe Shuster created in the 1930s. (In 1938, the first year Superman was published by Action Comics, Siegel and Shuster sold the Superman rights to what became DC Comics for $130.)

In the TV series, George Reeves starred as Superman/Clark Kent. Phyllis Coates was the original Lois Lane.

Reeves died in 1959 from a gunshot to the head in what was officially ruled a suicide. The Los Angeles Times reported three bullets were found at the scene. Fingerprints on the gun were never found, and no gunpowder residue was recovered on Reeves' hands.

Competing claims

The Smithsonian Institution's Lemelson Center for the Study of Invention & Innovation names Arthur Ehrat as the inventor of the breakaway basketball rim. His rims have been displayed in the Basketball Hall of Fame and the Smithsonian.

Ehrat's claim as inventor is seemingly not in dispute—unless you dig deeper and find others who disagree:

- The *Seattle Post-Intelligencer* ran a story in 2008 on Chuck Randall of Bellingham, Washington, who claimed to have invented the breakaway rim but lost out due to the fact he was lax in pursuing a patent and was cheated out of his royalties by an attorney. He even wrote a book about it, "My Impossible Dream."
- Toby Dittrich of Vancouver, B.C., credits himself and others for inventing the breakaway rim. Two were Paul and Kenneth Estlund of Denver, who wrote the book "Two Guys From Barnum, Iowa and How They Helped Save Basketball: A History Of U.S. Patent 4,534,556." (They did not get their patent until 1985.)
- Ken Mahoney, a member of Kansas State's first Final Four team in 1947, and his older brother Elmo also lay claim to the invention. They said they went to Philadelphia around 1980 and had the rim successfully tested by 76ers behemoth Darryl Dawkins, who in 1979 had shattered two Plexiglas backboards in a three-week span with his Chocolate Thunder dunks.

Competing claims often surface in the case of such impactful inventions. Regardless, Ehrat, who died in 2015, claimed he didn't make much profit due to all his legal battles.

"Honest to pieces, I know practically nothing about the damn game," he told the *Chicago Tribune*. "I pay attention to the dunk. That's the only thing I wait for."

You've Got the Big Idea. Now Get the Valuable insight.

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Don't Overlook TikTok

UNDERSTANDING PLATFORM'S UNIQUE ALGORITHM CAN GET INVENTIONS NOTICED WITHOUT A LOT OF FOLLOWERS

BY ELIZABETH BREEDLOVE

WHEN TIKTOK launched, it seemed to some like a playground for teenagers dancing in their bedrooms. For many entrepreneurs and inventors, it appeared to be another passing trend.

But in just a few years, TikTok has become one of the most powerful tools for getting ideas in front of the right people.

Today, content creators and businesses use TikTok not just to entertain but to educate, inspire and sell. If you've dreamed of seeing your invention take off online, and maybe even go viral, understanding how TikTok's algorithm works can help you get there.

Let's talk about how this platform works and how you can use it to promote your invention.

No following needed

Unlike other social platforms that require you to build a following before your posts start getting traction, TikTok works differently.

Every video you post is shown to at least some users, even if you have zero followers. If it performs well with that small group, the algorithm starts showing it to more and more people.

This is what makes TikTok such a level playing field; you don't need millions of followers and you don't have to spend thousands on ads. You just need to post a good video that keeps people watching.

Algorithm basics

TikTok's algorithm is designed to keep users engaged, so it favors videos that hold people's attention. If someone watches your entire video, likes it, comments on it, or shares it with a friend, that signals to TikTok that it's worth showing to more people.

Watch time is an important factor. A five-second video that people watch to the end can outperform a 30-second video that people scroll past halfway through. If your video keeps people watching, the algorithm will work in your favor.

TikTok also looks at:

- How quickly people engage with your video;
- What kind of content it is;
- What hashtags you use;
- Whether people rewatch it.

Keeping people watching

This might sound easier said than done, but here's the good news: TikTok viewers aren't looking for perfection.

They're looking for something that holds their attention. They want to feel like they're watching something they wouldn't see anywhere else.

As an inventor, you already have something that many others don't: a story. You saw a problem, built a solution and created something from nothing. That journey is what makes people curious.

So, show them the idea scribbled on a napkin; show them your early prototypes that didn't work; show them how your invention works now and what problem it solves. If you can make people feel like they're part of the process—even if for 15 seconds—you're giving the algorithm exactly what it wants.

You don't need a fancy camera, editing software or a whole marketing team. You just need your phone and a bit of patience.

Start by filming one video in which you talk about why you created your invention. Don't worry about getting it perfect; just be honest. Then post it.

The next day, try another one. Maybe show the invention in action. Keep testing different approaches until you find your rhythm.

You might be surprised by which video takes off. Sometimes, the one you almost didn't post is the one that ends up going viral.

Timing and consistency

You don't need to be a content expert to post on TikTok. In fact, many successful videos are

spontaneous and imperfect. But posting consistently does matter.

The more often you post, the more data TikTok has to learn which users are most likely to engage with your content. Over time, it starts to understand what kind of people are interested in your inventions and then shows your videos to others with similar interests.

Treat posting videos like you would any creative process. You wouldn't give up on an invention after one failed prototype, and the same applies here. Keep showing up, and continually refine your approach.

Hashtags and captions

Although hashtags won't make or break your video, they help TikTok understand what your video is about. This can make it easier for the algorithm to place your video in front of the right audience.

Use 3-5 relevant hashtags that describe your niche or invention (#newinvention, #DIY, #productdesign), as well as broader categories people follow (#smallbusiness, #inventorsoftiktok, #madeinUSA).

Your caption should also be short and clear. Ask a question or give a quick description. For example:

"Would you use this invention?"

"Solving a problem I've had for 20 years."

"Here's how my product makes life easier."

Simple language works best, especially for catching the eyes of viewers who are just scrolling through.

The big 2 seconds

The first two seconds of your video are potentially the most important. If someone doesn't care immediately, they'll scroll away, and the algorithm will take note.

So, instead of starting with a long intro, start with something interesting or unexpected. For example:

Show your invention solving a common household problem in one quick movement.

Show the product in action and say, "I invented this because I was sick of dealing with [problem]."

Once people are hooked, they're more likely to stick around—and when they stick around, the algorithm gives you a boost.

Always engage

Use your posts on TikTok to build a community. Often, the Comments section is where people start to connect with you as a person, not just a product.

When people leave comments on your videos, reply to them. Thank them for watching, answer their questions, or ask for feedback. Not only does this build a relationship with your audience, it also helps your video continue to perform well—because each comment is an engagement signal to the algorithm.

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.

Sleep Comfort Takes Wing

NYC/ITALY INVENTOR-ENTREPRENEUR'S TRAVEL SLEEPWEAR COMBINES FASHION AND FUNCTION **BY EDITH G. TOLCHIN**

I'M OFTEN contacted on social media by inventors with newly released products. Although every invention is "unique," here is a combo product that's really useful for travel.

Zipped up, it looks like an eye mask. Unzipped, it's both a warm and comfy stretch beanie hat, as well as a sleep mask. Inventor Lauren Lombardo fills us in.

Edith G. Tolchin (EGT): Tell us about yourself and your background.

Lauren Lombardo (LL): I'm an artist, entrepreneur, inventor, event planner and self-published children's book author and illustrator from New York City. I'm the second oldest of five children in a family deeply rooted in Italian traditions.

I'm also an Italian dual citizen, splitting my time between Italy and New York. My heritage and upbringing have shaped my passions for art, culture and travel. Having lived in inspiring places like Rome, Sorrento, Naples and parts of Spain, I've drawn on these experiences to fuel my creativity and entrepreneurial pursuits.

In 2021, I earned my MBA in Entrepreneurship while introducing The Butterfly Hat to the world. Now based in New York, I'm focused on expanding on my vision for The Butterfly Hat.

EGT: Had you invented anything before The Butterfly Hat?

LL: The Butterfly Hat is my first patented invention (U.S. Patent No. 11,191,672). Before this, I started open-to-the-public painting workshops in New York City and Italy. Being an event planner and children's book author and illustrator allowed me to hone my creativity and problem-solving skills, ultimately leading to the creation of this innovative product.

Growing up, I designed my own gowns and dresses and would have them made, so to me, this is nothing out of the ordinary. When God gives me an idea, I go for it!

EGT: What's the story behind The Butterfly Hat?

LL: The Butterfly Hat was inspired by my experiences as a frequent traveler. Each winter, I'd return to New York City to visit my grandmother, Betty, for her birthday. The brand name Betty and Bradley honors my family home on Bradley Avenue, built by our Sicilian immigrant family.

This magical home, with its garden and brook, was a sanctuary for creativity. My grandmother kept a butterfly sun-catcher in the window, which I took with me to Italy as a symbol of home.

PHOTOS COURTESY OF THE BUTTERFLY HAT

"Growing up, I designed my own gowns and dresses and would have them made, so to me, this is nothing out of the ordinary. When God gives me an idea, I go for it!"—LAUREN LOMBARDO

As someone who wanted to look stylish while sleeping on the go, I envisioned something compact, fashionable and comfortable. The idea of merging a beanie with an eye mask took shape, and through persistence and creativity The Butterfly Hat evolved into the patented design it is today.

EGT: What problem does this invention solve?
LL: The Butterfly Hat provides a stylish and practical solution for comfortable rest on the go.

Unlike traditional travel sleepwear, it complements your wardrobe while offering personal space and comfort. Perfect for travelers, night-shift workers, and anyone seeking rest in busy environments, it protects your head from shared surfaces, blocks light and overhead vents, and provides gentle compression for a soothing feel. It's as functional as it is fashionable.

EGT: Did you hand-sew the original prototype? How many attempts did it take to perfect?
LL: Yes! My seventh grade sewing classes came in handy. I was able to create the original prototype and took photos along the way.

Once the concept was clear, I took it to a professional seamstress, where it took several iterations over a few years to strike the perfect balance of style, functionality and comfort.

EGT: What was your patenting experience?
LL: The process was rigorous but incredibly rewarding, teaching me the value of perseverance and protecting one's ideas. I worked closely with the USPTO and my patent examiner. Writing it myself is something I will always be proud of.

EGT: Are you manufacturing in the United States? If so, how has that worked out?
LL: The Butterfly Hat is manufactured in the United States and overseas. While the process has presented challenges, I'm committed to ensuring high quality and supporting local production where possible.

As with anything, it takes lots of patience and thinking outside the box. This product was never made before, so naturally you have to stay on top of the entire process and use really good communication and visuals.

EGT: Any aspirations for "Shark Tank"? Have you crowdfunded?
LL: I've considered pitching The Butterfly Hat on "Shark Tank" to amplify its reach. While I haven't crowdfunded yet, it's an avenue I may explore to connect with supporters of innovative products.

EGT: Have you had any help with PR?
LL: To date, The Butterfly Hat has gained momentum primarily through word of mouth. It also received exposure on "Snake Oil" with David Spade and Christie Brinkley, where it was featured as a real product. The show highlighted its benefits for travelers and women who like to cover their hair while sleeping.

I would love to mention as well that The Butterfly Hat was recently nominated for best accessory from the Fashion Group International Rising Star awards for South Florida.

Lauren Lombardo conceived The Butterfly Hat because she wanted to look stylish while sleeping on the go with a product that is compact and comfortable.

EGT: Do you have any new products or styles in the works?

LL: Yes, I'm expanding The Butterfly Hat line with new styles and materials to cater to a wider audience, especially for kids and teens. I'm also working on other travel essentials designed to enhance comfort on the go.

The Butterfly Hat also protects your head from shared surfaces, blocks light and overhead vents, and provides gentle compression for a soothing feel.

EGT: Have you had any mentors to guide you during past obstacles?

LL: While I've learned from other inventors and their journeys, I've also faced unique challenges that required me to find my own path. The guidance I've received along the way has been invaluable in helping me stay focused on my goals.

One mentor I will never forget is QVC Italia's host, Stefano Marescotti, who was preparing The Butterfly Hat for launch on QVC Italia. He passed during COVID, and his enthusiasm and encouragement are something that will always keep me motivated.

EGT: What are your 5-year goals?

LL: My vision is to establish The Butterfly Hat as a globally recognized brand. I aim to expand its reach by introducing new product lines and continuing to innovate in the travel and comfort accessory space.

I plan to have The Butterfly Hat featured in airports worldwide and included in in-flight amenity kits for business and first-class passengers, promoting comfort and wellness during travel. Additionally, I see it as a perfect fit for hospital gift shops, resorts and cruise lines, offering stylish and practical solutions for on-the-go comfort in diverse settings.

Details: thebutterflyhat.com; bettyandbradley.com

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

Igniting Tomorrow's Changemakers and Innovators

In a world of rapid change, ensuring a young person has the skills and mindset to create new solutions to problems they face is more critical than ever.

InventEd is a network of practitioners, researchers, and others who are committed to cultivating the inventive mindset that exists in every student, preparing them for a future yet to be invented.

Why Invention Education?

- **Fosters Critical Thinking:** Invention education seamlessly integrates engineering design processes, design thinking, and entrepreneurial skills into creative problem-solving.
- **Develops Essential Skill Sets and Mindsets:** Students learn valuable skills like collaboration, communication, and resilience, which are essential for success in any field.
- **Integrates with Existing Curricula:** This comprehensive approach not only aligns with multiple subject standards, but also offers flexible, engaging, and fun lessons suitable for various time frames and subjects.
- **Inspires a Passion for Learning:** The thrill of students problem-solving for issues they care about ignites curiosity and engagement, empowering them to become lifelong learners.
- **Creates a Brighter Future:** By nurturing the next generation of changemakers, we can create a world where challenges are met with creative solutions, and opportunities abound.

How Can You Get Involved?

- **Connect with the InventEd Community:** Sign up for the InventEd Newsletter to learn what's happening within this network of educators passionate about invention education.
- **Explore Invention Education Resources and Programs:** Use our free resources and tools to learn how to integrate invention education into your curricula.
- **Try Invention Education Activities:** Test out activities in your classrooms and programs, and share your experiences and information with colleagues and leaders.

Together, we can embolden students to shape a better future — one inventive idea at a time.

Visit our website to learn more: https://inventioneducation.org/

inventEd

Eureka Momentum

SHOWCASE FOR LEMELSON-MIT'S INVENTEAM PROGRAM ILLUMINATES THE POWER OF INVENTING THROUGH STEM-BASED PROBLEM SOLVING —AND A LARGER MISSION TO MAKE IT A MAINSTAY IN SCHOOLS

BY REID CREAGER

THERE IS A REASON the classic symbolism of a light bulb over someone's head is so vivid: It conveys a spark in the ideation process that transcends mere light, a transformative instant that becomes a flowing current.

The potential for these big idea moments exists in all of us. The sooner they are cultivated and encouraged, the faster and more efficiently we can solve the world's problems.

Limited hand mobility due to arthritis, cerebral palsy, or other challenges is one such problem—especially in a country with millions of aging baby boomers. When a team of 12 students from Ygnacio Valley High School in Concord, California, was awarded a Lemelson-MIT InvenTeam grant worth $7,500 last October to invent a technological solution, their collective spark manifested itself through an exoskeleton hand that can be controlled through a phone app.

Leqi Li, who will attend UC Berkeley this fall, told CBS News that the app uses basic block coding. "We made the control convenient to use, with very easy access since everyone is using their phones."

The team was one of eight that participated in Lemelson-MIT's EurekaFest this June. The annual showcase event is the culmination of the InvenTeam program—which aims to inspire youth through hands-on, STEM-based activities for mixed teams that encourage inclusivity for girls. It has reached nearly 4,000 students and resulted in 19 patents.

Joseph Alvarico, Ygnacio Valley High engineering and robotics teacher and the 2024 California Teacher of the Year, said the team won the Massachusetts Institute of Technology's Golden Beaver Award that is given to only one InvenTeam each year. The team hopes its proof-of-concept design can evolve into an actual wearable exoskeleton hand over the next year. The invention is now patent pending.

Practical, personal impacts

"Ygnacio Valley High is in many ways the epitome of what the InvenTeams program is trying to achieve," Eduardo Hernandez, who served as Invention Ed Fellow for the team, told *Inventors Digest*. "Inventions are born when you address a problem, need, or want. In the case of YVH, the students clearly saw a need for a device that would have a direct impact on members of their own community."

Paul Fucile assisted the Cambridge Rindge and Latin School team in Cambridge, Massachusetts that addressed crowded rowing conditions in the Charles River by designing a two-way communication and real-time tracking mechanism for boat traffic along the water, minimizing the risk

ALL PHOTOS BY EDWARD HERNANDEZ UNLESS OTHERWISE NOTED

of collisions and improving traffic flow. He reveled in his light-bulb moment.

"Nothing can be more rewarding as an Education Fellow than experiencing firsthand when that light bulb goes off above their head! "I've seen the impact that taking an idea and bringing it through a working prototype can have to improve their self-confidence."

The latter is one of the core competencies promoted by the program and signature event. Avery Fearing, entering her senior year at Cambridge Rindge and Latin School, said one of her most important benefits from EurekaFest was "learning how to pitch and present our project, including technical components of our invention and their importance to the function of our device. These skills will most definitely serve me well in my future career as an engineer. ...

"It made our work so much easier, knowing we had a great group of people at Lemelson-MIT to back us up."

Ygnacio Valley High team member Gabrielle Love, also an incoming senior, said being the communications lead "allowed me to do what I love most.

"I got to present and speak with integral parts of our community to let them know what's happening at our school, and why they should be paying attention. I had the opportunity to present at a city council meeting, at our mid-grant technical review, at the redefining mobility conference, and so much more."

Re-inventing educating

The InvenTeam program and its signature event embody the innovative spark within us. Its larger mission seeks to maximize that ever-flowing current.

Lemelson-MIT is working to embed a culture of invention in schools through regular courses, ensuring that the next generation is equipped to tackle challenges we have yet to imagine.

Lemelson-MIT is working to embed a culture of invention in schools through regular courses, ensuring that the next generation is equipped to tackle challenges we have yet to imagine.

Below left: The Ygnacio Valley High School InvenTeam displays their invention "Dexterra" at EurekaFest. They received The Golden Beaver Award (below)—given to only one InvenTeam. The honor is presented by Beaver Works, a joint venture between MIT Lincoln Laboratory and the MIT School of Engineering.

Bottom: The Battle Creek InvenTeam discusses their prototype.

Stephanie Couch, executive director of the Lemelson-MIT Program and a career advocate for STEM learning (*Inventors Digest* January 2018 cover story), said educating the educators is paramount in that quest: "We have to figure out how we grow educators who know how to do this kind of work. And we have.

"When I started, we not only researched kids, we researched the teachers: what they brought in with them already, what it was they were getting from our professional development workshops that we weave into the event here—and then, working with us in that grant program across the year, what they learned and how they came out the other end.

"We've just published a paper on it even this year, my colleague and I. That told us how to build a professional development program for teachers."

The program boldly tells teachers they have to unlearn traditional methods "where they have to know it all before they teach kids and be smart and then download it into the kid's brain. ...

"And we've learned we can't just work with the teacher. We have to work with the school site administrator, like the principal or the superintendent, or at community colleges, the dean. Because everybody has to be bought in that this is a good approach to teaching and learning."

This new way of teaching is part of an assessment system that tracks more than academics. "They have subject matter tests, but we have now created a new system where they can document evidence of the growth of their technical skills—tools they can use that they couldn't use before, like CAD drafting. And then the human skills: teamwork, collaboration, ability to engage with community, and identify unmet needs.

"We have come up with these competencies that are key to inventing, and rubrics that students and teachers can use when they're looking at evidence to say, 'How far up in that skill have I gotten?'

"And so the big 'aha' for our year ahead, now that we've kind of put a prototype of this new assessment system together, is to start piloting it and building the resources that make that easy for teachers to use."

Call to action: Reshape policy

The assessment system is part of a larger effort to reshape policy for schools. Making invention education part of the daily curriculum is a tentpole; Ygnacio Valley High and Cambridge Rindge and Latin School are all in.

"This needs to go in the school day. And so that's where we're going to go. And we're going to need inventors and others who understand the value of this stuff. We're going to need them as champions." —STEPHANIE COUCH

Below: The Inventing Smart Solutions team from the Archer School for Girls displays their invention "FREDD" (Fire-Retardant Elimination Diminishment Device).

YVH's Hernandez said, "Technology teachers know that the best way to engage students in their own academic development is to work on something that interests them. By incorporating the invention process and mindset into a school course, you are creating multiple opportunities for students to see the connection between academics and real-world applications. YVH's invention was in many ways a natural way to leverage their experience in robotics—precisely the sort of 'jumping-off point' that the LMIT experience fosters.

"YVH will likely begin by incorporating that project-based 'end-goal solution or invention' in traditional STEM classes. LMIT does offer an invention course curriculum called Inventing Smart Solutions, which is currently being piloted by Greenbrier County Schools in West Virginia. In the end, YVH will develop their own path to invention education."

As for CRLS, Lemelson-MIT will team up to start an invention education class for ninth-graders.

Linda Radzvilla, executive director at Rindge School of Technical Arts, said, "We want to introduce and support curious young people into identifying and understanding the 'how' on solving a problem.

"By introducing ninth-graders to the invention process, it will inspire them to pursue sciences and introduce them to engineering concepts, as well as the opportunity to be exposed to a university partnership and experience campus opportunities."

Fucile, the CRLS Education Fellow, said LMIT providing support for an invention education program "is very timely. With many students at that age beginning to think about career paths, the skills that invention often requires can take many forms beyond engineering out a problem: marketing, understanding human factors, business, or communications—all majors they could pursue."

Couch said those two schools' commitment to daily invention education is part of a larger call to action.

"It's great that we can give grants to a handful of kids and get girls interested," she said. "But it's not OK that we're only reaching eight teams.

"This needs to go in the school day. And so that's where we're going to go. And we're going to need inventors and others who understand the value of this stuff. We're going to need them as champions.

"We're going to need them to lend their name and tell policy makers that this is important for America." ◆

For more on the 2024-25 InvenTeams: lemelson.mit.edu/inventeams

STEPHANIE COUCH PHOTO COURTESY OF LEMELSON-MIT

Above: The Southcrest Christian High School InvenTeam won the Excellence in Sustainability Award for their invention "Dockum Aquifer Treatment."

OTHER EUREKAFEST INVENTEAMS

- Battle Creek (Michigan) Area Mathematics and Science Center
- Colegio Rosa-Bell (Puerto Rico)
- Edison (New Jersey) High School
- Massachusetts Academy of Math and Science
- Nitro (West Virginia) High School
- Southcrest Christian School (Lubbock, Texas)

PART OF A BROADER MISSION

The Lemelson-MIT Program, a national leader in advancing invention education at the Massachusetts Institute of Technology, is funded by The Lemelson Foundation.

The foundation, a private 501 (c) (3) philanthropy founded in 1993 by Jerome H. Lemelson and his wife, Dorothy, invests in helping young people become inventors and in helping inventors change the world.

Foundation Executive Director Rob Schneider said:

"Lemelson-MIT, born from the vision of our founder Jerome 'Jerry' Lemelson, embodies Jerry's unwavering belief in the power of invention to change the world.

"Through their activities, and in alignment with The Lemelson Foundation's broader mission, we are dedicated to providing opportunities for every young person to engage in invention education—to discover problems that matter, craft innovative solutions, protect their intellectual property, and bring their creations to life.

"It's a privilege to continue Jerry's legacy, helping diverse minds transform their groundbreaking ideas into tangible impact and shape a better future for us all."

PHOTO BY NICK ROMANENKO, RUTGERS UNIVERSITY

10 QUESTIONS WITH

THOMAS NOSKER

INVENTOR OF RECYCLED PLASTIC LUMBER'S LATEST ACCOMPLISHMENT: NAI FELLOW

BY EDITH G. TOLCHIN

MY HUSBAND, Ken, is a Rutgers University alumnus, both undergrad and grad. So is every member of his family for the past few generations, so it's only natural that we are current on all things Rutgers.

Most recently, we saw an interview with Professor Thomas Nosker, the inventor of recycled plastic lumber, on the Rutgers.edu website (for which Ken is the application developer). He connected me with "The Plastics Guy"—so named because he is "the most plastic-centered professor in the Department of Materials Science and Engineering at Rutgers University"—who was recently named a National Academy of Inventors Fellow.

Made from recycled plastic bottles, coffee cups and other plastics, recycled plastic lumber has a major role in creating environmentally friendly and safe playground equipment; in designing raised garden beds; in sustainable fencing, and in large-scale construction, among other uses. Nosker helped build New Jersey's first structural recycled plastic bridge in 2002.

You can reach him at tjnosker@gmail.com.

"The Plastics Guy," a professor in the Department of Materials Science and Engineering at Rutgers University-New Brunswick, is a prolific inventor with more than 80 patents or patents pending in the United States.

Give us a little background on you and how long you have been teaching at Rutgers.

I grew up in Georgia and went from first grade through college (Georgia Tech) there. I came from a family where the boys were all taught about working on cars by our father, who did that as a hobby. I was also taught a little about watchmaking.

"I was an early pioneer in plastic recycling technologies, and about all the main technologies to recycle plastics were developed in our labs."

Above: Crushed polymer granules can be turned into new reused material. Thomas Nosker got his Ph.D. at Rutgers University in 1987 and has been a faculty member ever since.

My father passed away maybe six months after my college graduation, and I moved myself and my mother to New Jersey, where I had three siblings. I was hoping the grandchildren would keep her interested, and that worked.

I went to grad school at Rutgers and met my wife there. I got my Ph.D. in 1987 and have been working as a faculty member ever since. My undergraduate degree was in Mechanical Engineering, and my master's and Ph.D. degrees were in Materials Science and Engineering, specializing in Polymer Science.

Which courses do you teach?

I have taught classes in materials science and plastics processing, oriented toward packaging engineers as well as plastics recycling.

I was an early pioneer in plastic recycling technologies, and about all the main technologies to recycle plastics were developed in our labs. These include collection, sorting, resin recovery processes and recycled plastic lumber (including composites) technologies. Mechanical properties were a special focus in my classes.

How did this lead to your inventing recycled plastic lumber, and can you describe the many applications of this invention?

After our work on resin recovery processes—at first, Polyethylene Terephthalate or PET bottles, but adaptable to other plastics—which require separation from other plastics, we found that there were a lot of plastics in the recycling stream that were not worth the resin recovery process being employed. Yet the public kept feeding plastics that we weren't asking for into the recycling system.

The mixture of plastics was primarily high-density polyethylene, so I gambled that we might be able to process the mixture in large, lumber-shaped molds at first—and make items of good utility. This worked. However, we found that reinforcing the material made it much more useful, and more load bearing.

Where is the recycled plastic lumber manufactured? Did you oversee the first production run?

Recycled plastic lumber without reinforcement was developed in the 1988-89 timeframe, at Rutgers University, in our labs. I went ahead and published how we did it and did not apply for a patent, so that it could be freely done by as many as possible.

I began working more secretly on low-cost, novel ways of reinforcing these materials, and that went through several generations of technology development.

The structural recycled plastics composites technologies licensing has been through more than one company's hands and is now exclusively licensed worldwide to Sicut, Ltd. of the UK. They recently sold $88 million in product annually and have factories operating in the UK, and in Kansas. They have four new factories in several other countries, each at various stages of construction.

Initial focus has been on railway ties, but bridge components are being added, as well as other end uses.

Ultimately, we assisted in building train and railway bridges made of these materials on Army bases and road bridges in several states that are standing the test of time very well.

Were there any obstacles initially in product development, production, safety testing, importing or government regulations?

There were several types of obstacles, including wood-based construction materials companies trying to slow down standards development, and less-expensive composites technologies trying to block us as well. The Army Corps of Engineers helped us win those battles. The ASTM plastic lumber standards and test methods were basically developed in our labs.

Is this recycled plastic lumber sold for commercial use, such as at Home Depot?

The structural plastic lumber is not sold through big-box stores but is available through the manufacturer. Many companies make other plastic lumber-like products.

I understand you hold about 82 patents. Please tell us more about this.

My students and I have worked on several different but related technologies over the years. We developed fire-retardant coatings that work for flammable materials—including plastics—developing the best shapes for bridge components, and railway

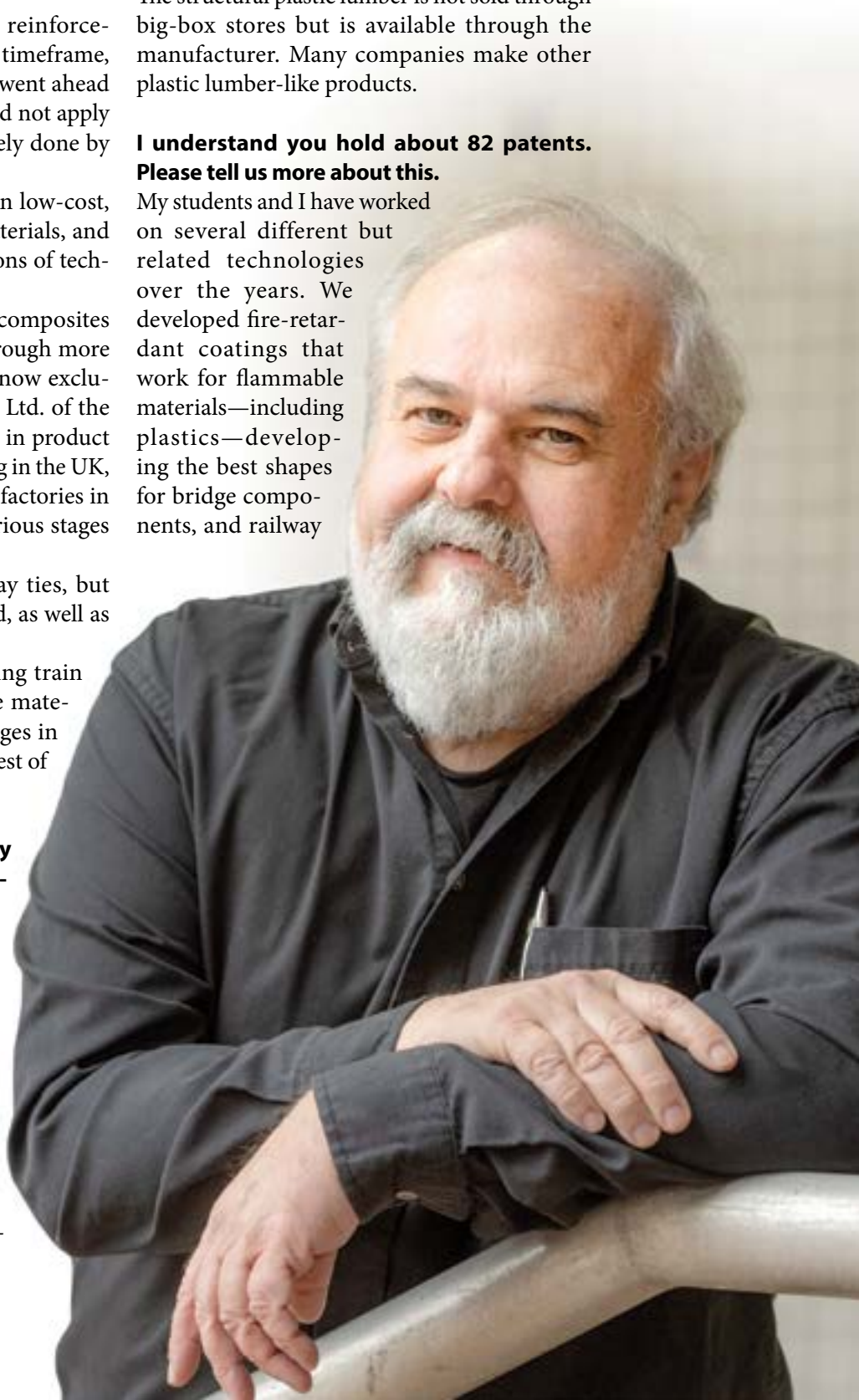

PHOTO BY NICK ROMANENKO, RUTGERS UNIVERSITY

"The mixture of plastics (in the recycling stream) was primarily high-density polyethylene, so I gambled that we might be able to process the mixture in large, lumber-shaped molds at first—and make items of good utility. This worked."

ties that interact with the ballast, and most recently, layered materials that can be mined like graphite and mica, being exfoliated in-situ in molten polymers, and as reinforcing agents for those materials.

This latest group of technologies yields the most amazing mechanical and electrical properties.

Notably, most of the work required me to build or adapt machines in order to make them work. I usually get composition of matter patents and don't divulge the machines exactly. Compositions of matter are very hard to get around. But without those machines, we could never make the materials with the properties we need.

Please share with us the honor of being named a 2024 National Academy of Inventors (NAI) Fellow.

It's a huge honor to be named a Fellow of any National Academy. Universities use the number of members as a measure of success. The award was given in Atlanta, the week of June 23-27 this year. Ironically, it's kind of where I started.

What was your first invention?

Probably regular recycled plastic lumber. My first patent was reinforced recycled plastic lumber, made stiffer and stronger by adding polystyrene to the mostly HDPE (high-density polyethylene) materials available. This is an Immiscible Polymer Blend, and it was thought that mixing these plastics would not yield any advantage by people that had tried, and published.

What are your hobbies?

I've always loved machines and have worked on watches and clocks, cars, and now professionally on plastic processing machines.

Machines are much less complicated than people are. Because I am really focused on machines, that is probably the key to success for me as a materials scientist.

I modify or build machines to suit my ideas. Most materials scientists don't have that background. Most machine designers don't know materials science well enough to know what to build. The advantage of being cross-disciplinary is an important point for young people to understand.

2024 NAI CLASS OF FELLOWS

170 ELECTED TO THE HIGHEST PROFESSIONAL DISTINCTION AWARDED SOLELY TO INVENTORS

Ishwar Aggarwal, The University of North Carolina at Charlotte
Pierre Agostini, The Ohio State University
Mark Akeson, University of California, Santa Cruz
Yousef Al-Abed, The Feinstein Institutes for Medical Research
Herb Aldwinckle, Cornell University
Dan Ammon, University at Buffalo, The State University of New York
Alain Aspect, Institut d'Optique Graduate School
Corinne E. Augelli-Szafran, Southern Research Institute
Clinton Ballinger, Rensselaer Polytechnic Institute
Robert S. Balog, Texas A&M University
Prith Banerjee, University of Illinois at Chicago
Ronald Barrett-Gonzalez, University of Kansas
Robert Bartlett, University of Michigan
Peter Basser, National Institutes of Health
Moungi Bawendi, Massachusetts Institute of Technology
Dibakar Bhattacharyya, University of Kentucky
Pratim Biswas, University of Miami
Silvia Blemker, University of Virginia
William Branch, University of Georgia
Malcom Brenner, Baylor College of Medicine
Richard K. Brow, Missouri University of Science and Technology
Edgar B. Cahoon, University of Nebraska-Lincoln
Jianfeng Cai, University of South Florida
Hui Cao, Yale University
Arnold Caplan, Case Western Reserve University
John Cioffi, Stanford University
Corie L. Cobb, University of Washington
Eric W. Cochran, Iowa State University
Daniel Codd, University of San Diego
Todd Cohen, New York Institute of Technology
Bruce N. Cronstein, New York University Grossman School of Medicine
Maria Croyle, The University of Texas at Austin
Anthony Czarnik, University of Nevada, Reno
Arvin Dar, Memorial Sloan Kettering Cancer Center
Matthew Dar, Iowa State University
Hiranmoy Das, Texas Tech University Health Sciences Center
Kenneth Dawson-Scully, Nova Southeastern University
Edward Delp, Purdue University
Horacio Dante Espinosa, Northwestern University
Ying Fang, University of Illinois Urbana-Champaign
Aaron Franklin, Duke University
Eby Friedman, University of Rochester
Klaus Früh, Oregon Health & Science University
Lilit Garibyan, Massachusetts General Hospital & Harvard University
Robert Garry, Jr., Tulane University
Manas Ranjan Gartia, Louisiana State University
Arun K. Ghosh, Purdue University
Simon Giszter, Drexel University
Steven Goldman, University of Rochester
Andrea Goldsmith, Princeton University
David Gracias, Johns Hopkins University
Joel Greenberger, University of Pittsburgh
Jaime Grunlan, Texas A&M University
Ephraim Gutmark, University of Cincinnati
Keith Hearon, Augusta University
Larry Heck, Georgia Institute of Technology
Wolfgang Heidrich, King Abdullah University of Science and Technology
Joseph Heremans, The Ohio State University
University of Missouri-Kansas City
Mark Hoffman, University of Missouri-Kansas City
Kaibin Huang, The University of Hong Kong
Bertram Jacobs, Arizona State University
Hamid Jafarkhani, University of California, Irvine
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Christopher S. Johnson, Argonne National Laboratory
Sergei V. Kalinin, The University of Tennessee, Knoxville & Pacific Northwest National Laboratory
Homayoon Kazerooni, University of California, Berkeley
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Klaus Lackner, Arizona State University
Gregory Lanza, Washington University in St. Louis
Chih-Kung (C.K.) Lee, National Taiwan University
Hai Li, Duke University
Matthew Laskoski, U.S. Naval Research Laboratory
Hui (Helen) Li, Florida State University
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Cynthia Owsley, The University of Alabama at Birmingham
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Makarand Paranjape, Georgetown University
Dan Peer, Tel Aviv University
Wellington Pham, Vanderbilt University
Edwin Piner, Texas State University
Yuri Peterson, Medical University of South Carolina
Konstantin Petrukhin, Columbia University
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Jeffrey Reed, Virginia Tech
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Catherine Riddle, Idaho National Laboratory
Guillermo Risatti, University of Connecticut
Carol Robinson, University of Oxford
Cliona Rooney, Baylor College of Medicine
Alberto Salleo, Stanford University
Richard Samulski, The University of North Carolina at Chapel Hill
Gaurav Sant, University of California, Los Angeles
Edward Sargent, Northwestern University
Charles Shoemaker, Tufts University
Daniel Siegwart, UT Southwestern Medical Center
Neal Sikka, The George Washington University
Blake Simmons, Lawrence Berkeley National Laboratory
Rajesh Singh, Morehouse School of Medicine
Anand Sivasubramaniam, The Pennsylvania State University
Yiqiao Song, Harvard University
Vivek Sujan, Oak Ridge National Laboratory
Zhaoli Sun, Johns Hopkins University
Nian Sun, Northeastern University
Yang Tao, University of Maryland, College Park
Ravi Thadhani, Emory University
(Aaron) Voon-Yew Thean, National University of Singapore
Ashley Thrall, University of Notre Dame
Martin Thuo, North Carolina State University
Theo T. Tsotsis, University of Southern California
Francisco Valero-Cuevas, University of Southern California
Omid Veiseh, Rice University
Victor Veliadis, North Carolina State University
Uzi Vishkin, University of Maryland, College Park
Edmund Waller, Emory University
Angela Wandinger-Ness, The University of New Mexico
Guoan Wang, University of South Carolina
Grace Jinliu Wang, Worcester Polytechnic Institute
Dean C. Webster, North Dakota State University
Di Wei, University of Cambridge
Marc Weinberg, Draper Laboratory (CDSL)
Ulrich Wiesner, Cornell University
Hugh E. Williams, RMIT University
Peter Wipf, University of Pittsburgh
Gary E. Wnek, Case Western Reserve University
Jang-Yen Wu, Florida Atlantic University
Wei Wu, University of Southern California
Younan Xia, Georgia Institute of Technology
Longya Xu, Florida State University
Zhen Xu, University of Michigan
Mengsu (Michael) Yang, City University of Hong Kong
Yang Yang, University of California, Los Angeles
Jianhua Yu, University of California, Irvine
Carlos A. Zarate, Jr., National Institutes of Health
Zhongfei (Mark) Zhang, Binghamton University, State Univesity of New York
Ji-Guang (Jason) Zhang, Pacific Northwest National Laboratory
Junshan Zhang, University of California, Davis
Min Zou, University of Arkansas

BRIGHT IDEAS

Titan2

5G QWERTY PHYSICAL KEYBOARD SMARTPHONE

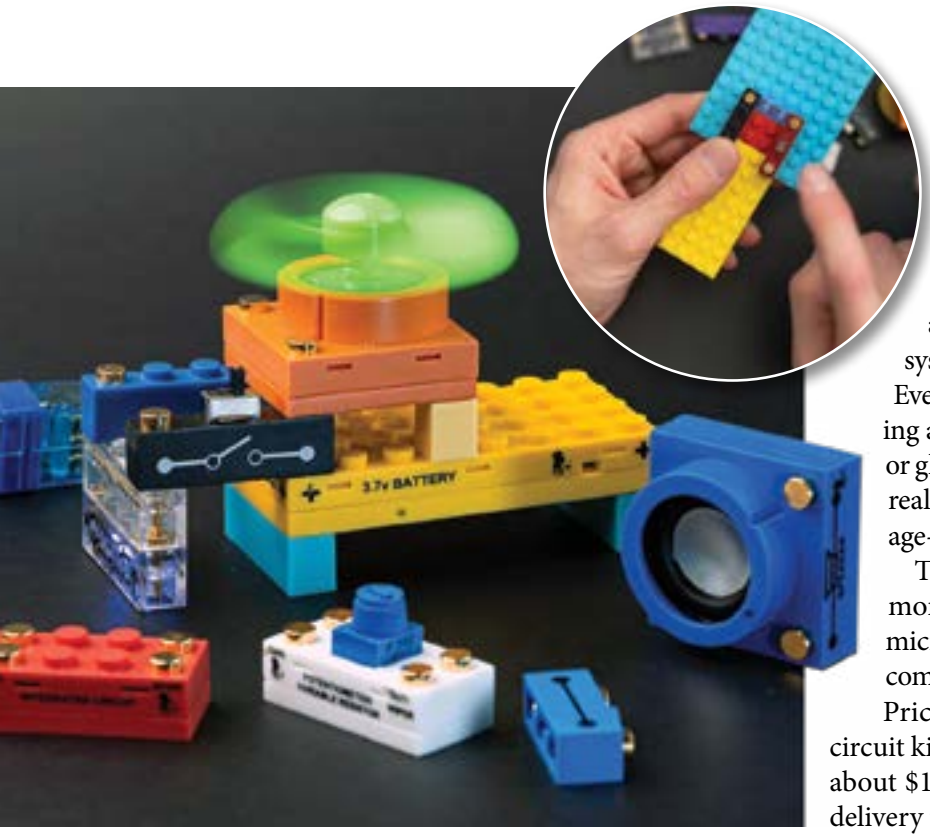
unihertz.com

Titan2 aims to outperform its 2019 predecessor with new design features while keeping its classic aesthetic.

Powered by Android 15, the phone features a 4.5-inch square primary display with a resolution of 1,440 by 1,440 pixels, alongside a secondary rear display. The fully redesigned physical QWERTY keyboard seeks to promote a more comfortable, reliable and versatile tactile typing experience.

The new keyboard features customizable A-Z physical keys; a scroll assistant; cursor assistant, and keyboard backlight. Keys can be programmed into shortcuts so you can switch between apps.

Titan2 will retail for $399, with shipping to crowdfunding backers set for October.



SparkBlocks

STEM BLOCKS THAT CLICK ONTO LEGO BRICKS

blockandcode.com

SparkBlocks takes simple building blocks and transforms them into an interactive system with lights, sounds, motion and sensors. Every experience can be a lesson in problem solving and skill building. There are no screens, tools or glue. SparkBlocks is a hands-on introduction to real circuit concepts, taught through structured, age-appropriate learning guides and videos.

The company is prototyping its circuit kit and more advanced parts, including robotics and microcontrollers. It is also developing an online community where users can share their creations.

Prices will depend on the quality and level of circuit kits bought. An introductory kit will retail for about $180, an advanced kit about $350. Estimated delivery to crowdfunding backers is December.

Einsen

AUTOMATED IRONING DEVICE

einseninnovations.com

About the size of a home printer and said to be the first of its kind, Einsen simultaneously steams and presses garments using patented technology.

Its makers promote "one motion, one minute, one perfect finish." Just place the wrinkled garment flat into the device.

Einsen poses no risk of burns, for you or your garments. The exterior stays cool to the touch with no exposed hot plates. If left unattended, the device automatically shuts off.

Unlike traditional steamers, Einsen doesn't leave garments damp. There is no drying time, no water spots and no compromise on finish.

The manufacturer's suggested retail price is $2,168. Shipping to crowdfunding backers is not scheduled until December 2026.

"Be alone. That is the secret of invention. Be alone; that is when ideas are born." —NIKOLA TESLA

TRU

ANKLE-BASED STEP TRACKER

launch.countontru.com

Promoted as "small enough to hide but stylish enough to show off," TRU is an ankle bracelet that acts as a step tracker, with claims of 50 percent better accuracy than wrist-based trackers.

It features a customizable design—28 options in multiple colors and finishes (gold, silver, rose-gold)—and measures a pill-sized 10mm. Just pop it into the locket accessory. Waterproof, weatherproof and hypo-allergenic, TRU lasts for a month on a single charge.

TRU integrates with your phone's native health system, so you can use it with your favorite fitness tracking app. The TRU app can help you meet incremental goals.

The tracker has a manufacturer's suggested retail price of $145. It is to be shipped to crowdfunding backers in December.

What's Your Pleasure?

CHOOSE YOUR BEST MARKETING APPROACH BY UNDERSTANDING THE MANY DIFFERENT KINDS

BY WILLIAM SEIDEL

I OFTEN HEAR people say, "All I need is marketing!" And I reply, "What kind of marketing?"

Which usually leaves them speechless.

For most companies, the package and price are the entire marketing budget.

There are over 200 forms of marketing. Most companies use a combination to generate leads, acquire new customers and retain existing customers.

Marketing includes the many traditional forms of research, print and positioning to advertising, social media and sales. It also includes every customer touchpoint, such as business cards, your voice message and your package.

If it's a message or media that reaches and influences consumers, it's marketing.

With the introduction of the internet, the rules have changed. In the past 20 years, marketing has evolved at an unprecedented pace. Companies have never had such powerful technologies for reaching, understanding and selling their products.

Marketing is constantly changing because technology and the competition are constantly changing. It is complicated by the many new technologies and platforms. It takes a chess master's talent of strategic thinking to predict the next move.

Every campaign has many considerations—such as local, national or international campaigns and premium, mid-price and low-price product positions.

Remarkably, the basics have remained the same. There is still the customer, the message and the media to reach them.

2 broadest categories

Marketing's broadest applications are Business to Business (B2B) and Business to Consumer (B2C).

B2B marketing is directed toward businesses and organizations as potential customers or clients. It focuses on building professional relationships, demonstrating value and addressing specific business needs.

Content marketing is effective for B2B through industry-specific blogs, whitepapers and case studies. Sharing relevant business content can attract and retain customers.

B2C marketing uses traditional and digital methods to focus efforts toward individual consumers of a product or service. It emphasizes emotional appeal, convenience and provides what customers want. It engages and influences end-users with ads, promotions and attractive offers.

Outboard marketing forms

Under that B2C umbrella, outbound marketing (also called traditional marketing) uses outreach methods to contact customers and promote products. It uses traditional methods such as billboards, print ads and broadcasts to push the message with the hope of finding potential customers.

Despite what you may hear, traditional marketing is alive and well —but diminishing in effectiveness. It is a shotgun approach of broad coverage like junk mail, newspaper advertising and cold calls. It is costly with trade shows and expensive advertising, and the return on investment is often hard to determine.

Direct marketing needs credit cards to order and telephones to complete the sale. It was quickly adapted to telemarketing, direct mail and direct response advertising.

Direct marketing can be optimized for customer acquisition, upselling and cross-selling, reducing defections, extending loyalty and improving customer retention. The benefits are great: payment before shipping, quick response and measurable results.

Data mining, call centers, campaign management and sales force automation originated with direct marketing.

Outbound marketing can be enhanced to better define the demographics of customers

to better target them. Smart direct marketing is like a rifle approach.

Successful direct marketing does this by knowing customers, the magazines they read, their purchase patterns and what influences their purchase decisions. This will significantly increase the results.

Inbound marketing forms

Inbound marketing, also called digital marketing or online marketing, attracts customers with valuable and relevant content.

Inbound marketing pulls interest to you, rather than outbound pushing. Inbound focuses on creating content that solves customer problems, builds trust and encourages them to engage with the company for more information.

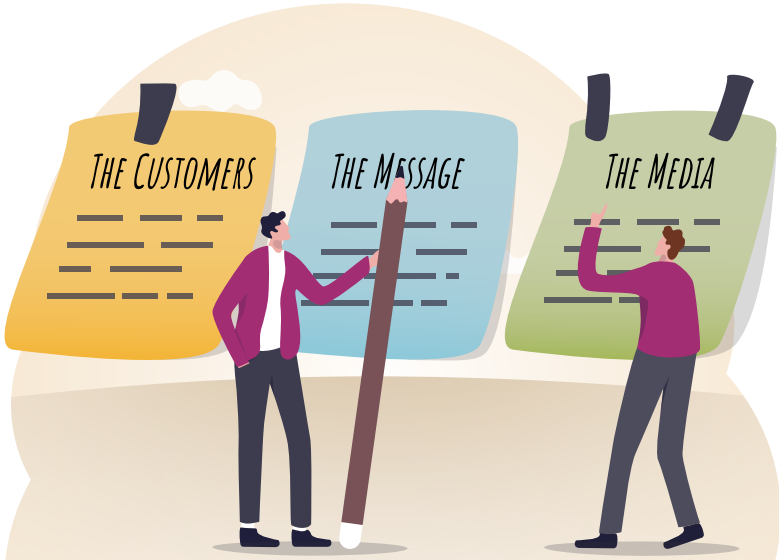
Digital marketing uses channels such as social media and email to reach enormous viewers and entice their interest promoting products and services to broad audiences. Direct marketing laid the foundation for digital marketing using credit card payment, guaranteed mail delivery and advertising in all media with 800 numbers.

The purpose of digital marketing is to cast a wide net of content to entice those interested in responding. Inbound strategies allow you to engage an audience of qualified leads who may make a purchase.

Social media marketing uses Facebook, Instagram and TikTok, among others, to leverage the power of social networks. This is effective to connect with audiences to generate leads, acquire customers, build brand awareness and promote products.

Email marketing includes sending newsletters, promotional emails, personalized content and other forms of communication to foster relationships, increase brand awareness and drive sales. This is often through subscriptions to enhance customer demographics. It sends targeted emails to subscribers with the goal of promoting products, sharing updates and building loyalty.

Digital marketing encompasses a wide range of activities, including content creation, banner and popup advertising, and optimizing websites for search engines (SEO). Perhaps the most important benefit is that digital marketing is the most cost-effective way to reach a large audience compared to traditional marketing.



Marketing is constantly changing because technology and the competition are constantly changing. But the basics have remained the same.

The advent of the internet employed direct marketing methods to the digital world and today garners 25 percent of the U.S. marketer's budget, surpassing newspapers and broadcast TV.

If your in-box is anything like mine, you understand that email marketing is the electronic version of junk mail—except it is a fraction of the cost of direct mail.

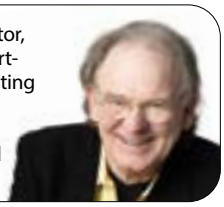
Today, you can go online, press a few buttons and get what you order the next day. In many cases, information, software, books, music and movies can be immediately downloaded, which is distribution at the press of a few buttons.

Last word

What kind of marketing? The purpose remains the same as always: to create value. And though it appears very complicated, the basics are the customer, the message and the media.

Well-managed marketing is the best advantage a company can have.

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



Which Adhesive Should You Stick With?

E-6000 AND B-7000 ARE GOOD FOR JOINING COMPONENTS, THOUGH BOTH HAVE SMALL DIFFERENCES **BY JACK LANDER**

MOST PROTOTYPING projects consist of two or more components that must be joined. We have a number of devices and methods for achieving sound joints on factory products. But our anxiousness in creating a number of versions of a prototype before achieving the final version does not always justify spot-welding, brazing, bolting, soldering, snapping together, and so on.

An adhesive can offer a satisfactory joint, although we may never consider it for a factory product.

Some adhesives may not hold well on certain materials—for example, epoxy and various plastics. And epoxy requires clamping the components until it cures. If the components are made of wood, ordinary wood glue also requires clamping until the glue dries.

But there is an adhesive I have been using for a few years that often solves the problems mentioned above. It is E-6000 adhesive.

E-6000: Flexible, tough

E-6000 is a flexible, rubbery, solvent-based adhesive. But don't think of it as conventional rubber cement, which is used primarily with paper or card stock.

This product is very tough and almost impossible to tear apart, except in minuscule applications. In fact, you can elongate it 900 percent, and it claims an industrial tensile strength of 3,500 pounds per square inch. Also, it can withstand extremes of temperature for minus 40 to 180 degrees F.

You can avoid clamping in many cases by using a thin layer and waiting a minute or two before joining. This provides enough evaporation of the solvent to hold the pieces together.

Now, if you think that E-6000 is great (and it is), there is another product with a similar-looking, grey tube: B-7000.

The tube offers a plastic nozzle similar to that used on the E-6000—except within the nozzle,

My preference is the B-7000 with the small nozzle for most prototyping work. I suggest the E-6000 if you are filling large gaps.

and protruding when the cap is removed, is a very small tube (.040 inches in diameter). This enables those who work with jewelry and very small objects to apply a small dot of the adhesive, which is also less viscous than the E-6000.

For most of the prototypes and household items I work on, I prefer B-7000.

My microwave mainstay

For example, my wife, Mary, uses a splatter cover when she heats dishes in our microwave oven. It now has four places I have repaired using B-7000. The typical defect is a crack in the rim, extending an inch or more.

I spread the crack and secure it with a toothpick. Then I apply a small amount of B-7000 to both edges of the crack and remove the toothpick. This causes the oozing of the B-7000 to the inside and outside surfaces, to which I apply more adhesive. This process anchors the surface adhesive, and, although it's not a pretty sight, it is functional. (I could buy a new splatter cover for less than $8, but repairing stuff has always been a learning process that carries over into my prototyping.)

My preference is the B-7000 with the small nozzle for most prototyping work. I suggest the E-6000 if you are filling large gaps.

But with either version of this adhesive, a precaution: If you are adhering two flat pieces, do not clamp them with too much pressure. You need to leave some space for the volatile (a substance that can turn into vapor) to exit, and for the adhesive to dry. A gap about the thickness of two pieces of computer-printer paper is adequate.

Why not order a tube of B-7000 while it's fresh in your memory? I know that once you begin using it, you will find many uses around the house as well for prototyping.

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.

AI ABCs

PROBLEM SOLVING

You've read in *Inventors Digest* how artificial intelligence can save lives, most notably by improving and expediting disease diagnoses and predicting natural disasters.

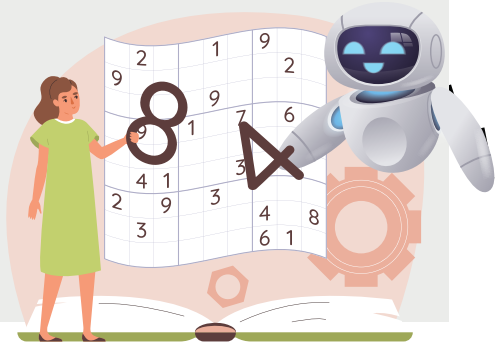
But can it conquer a Sudoku puzzle? Yup.

The various algorithms used to solve Sudoku puzzles are but one of AI's countless problem-solving aspects. In AI, problem solving encompasses the same core processes and principles used by humans: identifying challenges, analyzing situations and utilizing strategies to discover solutions.

Five logic-based techniques make up the heart of AI problem solving:

- Search algorithms. Common types include the uninformed or blind search method, which explore paths from the initial state to a goal state without using domain-specific knowledge. Examples include the breadth-first and depth-first searches. The informed search (also called the heuristic search) uses additional information about the state space of a problem.
- Constraint Satisfaction Problems entail finding solutions that satisfy specific constraints. Terminology associated with CSPs includes techniques such as backtracking, constraint propagation and local search.
- Machine Learning lets AI systems learn from information to improve problem-solving abilities over time, utilizing supervised, unsupervised and reinforcement learning paradigms.
- Optimization Techniques is what the term suggests: a means of finding the optimal solution from various feasible solutions, utilizing techniques that include linear programming, dynamic programming and evolutionary algorithms.
- Natural Language Processing allows AI to understand and process human language, which helps it solve problems associated with text analysis, sentiment analysis (also known as opinion mining, used in customer feedback) and language translation.

By the way, according to Games Learning Society, algorithms used to solve Sudoku puzzles include Bruce Force, which uses a systematic search of the solution space to find the answer; Dancing Links, a data structure to eliminate impossible values in the puzzle; and Constraint Programming, which models the puzzle to find a solution. —*Reid Creager*



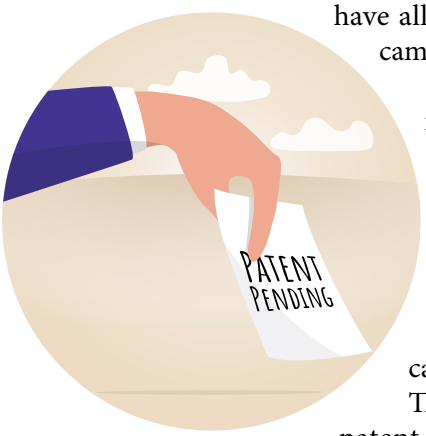
On Your Markings, Get Set, Go!

LAWS GOVERNING PATENT MARKING VARY WORLDWIDE, WITH U.S. BEHIND THE TIMES **BY LOUIS CARBONNEAU**

ONCE UPON A TIME, in the halcyon days when inventors actually made things—you know, physical objects you could drop on your foot—life was refreshingly simple. You stamped "patent pending" on your widget, shipped it off into the world, and slept soundly knowing you had covered all your legal bases.

Those were the days when patents were as tangible as the products they protected, and the biggest marking challenge was finding enough space on a horseshoe.

Then, the digital revolution arrived. Software emerged, followed by the internet, the cloud, AI, and a parade of intangible innovations that have all the physicality of a politician's campaign promise.



Suddenly, patents began covering things you couldn't engrave if you tried—unless you're particularly gifted at etching code into thin air.

The problem? Patent law, much like that one friend who still uses a flip phone, hasn't caught up with reality.

The legal framework governing patent marking remains stubbornly rooted in the past. Many inventors discover too late that their cavalier approach to marking requirements has cost them more than a missed opportunity; it has cost them cold, hard cash and legal leverage.

What follows is a tour through the current state of patent marking in the United States and internationally, complete with survival tips for navigating the most common pitfalls that trap the unwary.

In U.S.: A high-stakes game

When Arctic Cat lost millions in damages because its licensee forgot to stamp patent numbers on snowmobiles, it wasn't just embarrassing—it was a master class in how America's patent marking obsession can bankrupt the unprepared.

While Company X spends $2 million annually on marking compliance programs, its German competitor focuses that same budget on R&D. Guess which approach builds stronger patents?

This tale perfectly illustrates how patent laws worldwide may share common ancestry, but patent marking requirements reveal where different jurisdictions decided to take wildly divergent paths—like distant cousins at a family reunion who can't agree on anything except that they all root for the same football team.

The United States stands magnificently alone in many things these days, including how it treats patent marking as a high-stakes game where the penalty for losing isn't just embarrassment but potentially millions in damages. Meanwhile, the rest of the world watches this American obsession with bemused tolerance.

Under 35 U.S.C. § 287(a), American patent law operates on a simple principle: Mark your products with patent numbers, or watch your damages disappear faster than free doughnuts at a law firm meeting. The statute essentially tells patent owners, "No marking, no money"—except for damages accruing after you've actually told the infringer to stop the shenanigans.

This creates what lawyers euphemistically call "strong incentives for compliance." The 2011 America Invents Act mercifully introduced virtual marking, allowing companies to slap "Patent" plus a website URL on their products

instead of trying to fit 17 patent numbers onto a smartphone case with a magnifying glass.

Unnecessary policing?

The real fun begins with licensing. In *Arctic Cat v. Bombardier*, the United States Court of Appeals for the Federal Circuit clarified the impact of failure to mark products on the recovery of pre-suit damages under the above-cited stipulation in patent law. The court held that if the patent holder fails to mark its own products, it cannot recover damages for infringement that occurred before the filing of the lawsuit unless the alleged infringer had actual notice of the infringement.

Although the case did not directly address a scenario in which the license agreement explicitly exempts the licensee from marking obligations, it underscores the importance of complying with marking requirements to secure the ability to claim past damages.

The court's logic? Patent owners must "police" their licensees' marking compliance, turning every licensor into an unpaid compliance officer. Because nothing says "efficient business relationship" like requiring patent owners to become hall monitors for their own licensees.

Recent decisions demand marking "substantially all" products, with courts playing a numbers game in which 95 percent compliance passes but 77 percent fails. Because nothing says "efficient legal system" like forcing federal judges to become statisticians with calculators.

Method patents get a free pass because, as the federal circuit reasoned in 1998 in *Hanson v. Alpine Valley Ski Area*, you can't exactly stamp patent numbers onto a series of steps. This makes about as much sense as trying to trademark a dance move—which, incidentally, people have also attempted.

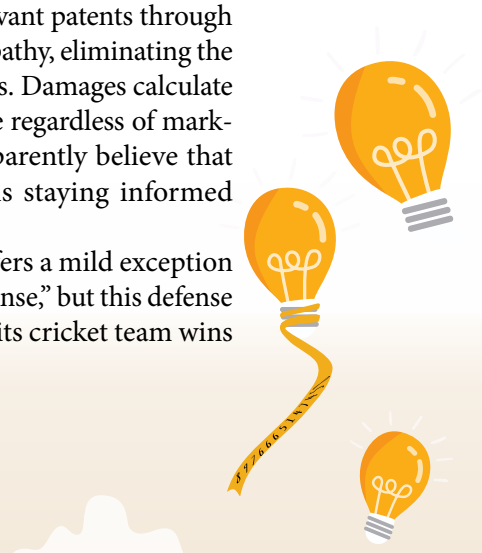
Marking around the world

Europeans have taken a refreshingly different approach: They simply don't care about patent marking. The European Patent Convention contains exactly zero marking requirements, treating the concept with indifference.

Germany epitomizes this philosophy with characteristic efficiency. Its law assumes commercial actors know about relevant patents through some form of business telepathy, eliminating the need for physical reminders. Damages calculate from the infringement date regardless of marking, because Germans apparently believe that running a business means staying informed about relevant patents.

The United Kingdom offers a mild exception through its "innocence defense," but this defense succeeds about as often as its cricket team wins in Australia.

American patent law operates on a simple principle: Mark your products with patent numbers, or watch your damages disappear faster than free doughnuts at a law firm meeting.



WHAT THIS MEANS FOR YOU

For patent prosecutors:

- Draft U.S. licenses with explicit licensee marking duties, post-Arctic Cat
- Consider virtual marking strategies for complex product lines
- Advise clients on jurisdiction-specific enforcement strategies

For in-house counsel:

- Budget enough to meet U.S. marking compliance programs
- Develop licensee monitoring systems to avoid Arctic Cat disasters
- Consider foreign filing strategies that bypass U.S. marking complications

The UK recognizes virtual marking—though with typical British understatement, its practical impact remains "limited." France and the Netherlands follow Germany's lead, treating patent marking like an optional garnish rather than the main course.

Despite handling over 800 cases since 2023, the new Unified Patent Court hasn't yet introduced marking requirements—confirming that Europeans prefer focusing on actual infringement rather than administrative theatrics.

The fundamental difference? European courts provide three damage calculation methods—lost profits, reasonable royalty, or infringer profits—available from Day 1 of infringement. No marking homework required.

Asian jurisdictions have been enhancing patent enforcement while keeping marking requirements reasonable.

China's recent reforms increased penalties—with statutory damages up to 5 million RMB and punitive damages up to five times actual damages for willful infringement—but marking remains optional. China takes false marking seriously, with fines up to 2.5 million RMB for fake patent numbers.

Japan has become a patent enforcement leader without requiring marking, awarding significant damages in some cases. Korea, with optional marking, improved enforcement dramatically with 2024 amendments raising punitive damages to five times actual damages and favorable conditions for foreign patent holders.

TAXING JUSTICE?

I've recently applauded U.S. senators for pushing legislation that would strengthen patent rights—a rare moment of bipartisan agreement that patents might actually deserve protection. But I must report that these same political masterminds have introduced a draft bill that threatens to undermine their previous good work.

Sen. Thom Tillis (R-North Carolina) and Rep. Kevin Hern (R-Oklahoma) just introduced the Tackling Predatory Litigation Funding Act—a title that sounds noble but masks a troubling reality.

The proposal would make patent enforcement significantly more expensive through what can only be described as a "creativity tax"—because apparently, the current system wasn't quite discouraging enough for inventors seeking to defend their rights in court. It's legislative whiplash at its finest: One hand giveth, the other hand taketh away, and both hands apparently belong to the same body politic.

At its core, the bill slaps a 40.8 percent excise tax on profits earned by litigation funders in any civil case—but the real target, as Tillis himself made clear, is patent litigation, especially when foreign-backed funders are involved.

The *Wall Street Journal*, in its predictable corporate defense stance, cheered the bill as a way to stop "patent trolls" armed with Abu Dhabi money. But here's the problem: This bill doesn't just hit deep-pocketed financiers; it also guts the only lifeline small inventors have when going up against the Goliaths.

Patent litigation is eye-wateringly expensive—easily running $3-7 million per case. Without funding, a solo inventor has no chance of enforcing a patent that took years and $50,000 to $150,000 to obtain. This bill essentially tells them: Good luck—litigate on your own dime, or not at all.

And let's not pretend this is some neutral, across-the-board tax on all litigation funding. There is no comparable tax on funders of class actions, personal injury claims, or securities fraud cases—where litigation finance is even more prevalent.

You can fund mass torts all day long, but the second you help a garage inventor assert his or her patent, Uncle Sam takes nearly half the upside. If that's not picking winners, what is?

Recent data show:

- Patent litigation funding: $2.1 billion annually, now facing a 40.8 percent tax

Canada has explicitly rejected the U.S. marking approach with the diplomatic firmness typically reserved for declining American beer. The Supreme Court of Canada confirmed that patent marking should not affect damage calculations, treating the entire U.S. constructive notice doctrine like a misguided American export.

Canadian law provides full damages from the infringement date without marking requirements, subject only to a six-year limitation period. The landmark Nova Chemicals case awarded $645 million in damages while completely ignoring marking considerations—proving that Canadians can be devastatingly effective in patent enforcement without the administrative theatrics.

Recent Canadian developments focus on practical improvements like electronic filing systems rather than marking requirements.

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.

- Class action funding: $8.7 billion annually, tax-free
- Personal injury funding: $15.2 billion annually, tax-free

Critics from across the IP community have sounded the alarm. If patent rights can be quietly weakened through tax policy, what's next?

Environmental claims? Civil rights suits?

Patent reform is overdue, but not like this. If there are legitimate concerns about national security risks from foreign-funded lawsuits, let's increase disclosure requirements (which most funders are perfectly fine with), not blow up the funding ecosystem that gives inventors a fighting chance.

If we want to prevent frivolous suits, then tighten pleading standards or fund early validity reviews—not punish every funder who dares invest in enforcement.

The Tillis bill isn't about fairness. It's about protecting dominant incumbents from accountability, using the tax code as a blunt weapon. And in the process, it threatens to make the U.S. patent system what it was never meant to be: a right in theory, but unenforceable in practice—unless you're rich.

Be Specific in Your Application

GENERALLY SPEAKING, GENERAL DESCRIPTIONS WILL RUIN YOUR CHANCES OF GETTING A PATENT **BY GENE QUINN**

FOR ANY patent application to be complete, the invention must be described with great particularity. Many times an inventor will only generally describe the invention in a patent application, which creates a significant problem.

This problem presented itself to me when an inventor provided me with an extremely vague description of his invention and wanted me to do a patent search and prepare a provisional patent application.

I explained that I needed much more detailed information. The inventor told me he supplied plenty of information and was not going to supply more because he wanted to keep the description very general.

That is, of course, his right, but a general description is a recipe for failure. I declined representation. I don't need those types of headaches.

Cover all possible questions

This interaction is more common than you might think. Inventors not only frequently think they know more about patents than a patent attorney, but inventors also frequently think it is best to have the broadest, most vague description of an invention possible.

Conceptually, a general description may seem best. But if you have any knowledge of U.S. patent law, you realize that general, non-informative and vague descriptions are unacceptable. The law requires more.

It is imperative that the invention be described with the level of detail required by U.S. patent laws, not merely the level of description that the untrained inventor thinks is appropriate. There must be considerable time spent describing the structure of the components that make up the invention, as well as the possible mechanical and electrical connections necessary for the components to fit together and perform the specified function. It is critical to describe all variations.

Beyond that, how can you realistically do a patent search on a first-level, vague articulation of an invention?

There have been more than 12 million U.S. utility patents granted and well over 1 million design patents. I can guarantee that if you vaguely describe your invention, it will be easy to find prior art that will be exactly what you have described.

Of course, when you see it, you will say: "That isn't anything like my invention." But if you say your invention is a multi-purpose knife, for example, and that is all you say, then any multi-purpose knife would be prior art that would prevent you from obtaining a patent.

With patents, the devil is in the details. What is the structure of the components? What is the overall structure of the unit? How are things connected? How do they interact? How would they be made? How are the pieces assembled? What are the alternatives for making, connection, interaction? What materials can be used? What optional features are present? What could be present?

These and other descriptive questions, including what is specifically unique compared to the

Spend considerable time describing the structure of the components that make up the invention, as well as possible mechanical and electrical connections necessary for the components to fit together and perform the specified function. It is critical to describe all variations.

prior art (more on that in a moment), must be answered in order to particularly define the invention in a way that maximizes the likelihood of obtaining a patent. Failure to consider the various combinations and alternatives that make up an invention is a common mistake with severe consequences.

One-shot opportunity

If you do not fully describe the invention, the patent application you file will be worth little. This is true because once you file a non-provisional patent application, you cannot add additional description to the application.

If you want to add additional description to explain how your invention is unique, you must file a new non-provisional patent application—and any time you file a new patent application with new disclosure, that means you get a new priority date for prior art purposes. Under a first-to-file system, like the U.S. system is, a new priority date in many instances will create a fatal impediment to getting a patent.

Many times, inventors believe the details and variations of their invention will be clear. But patent law does not expect the reader of the patent to be a mind reader.

Further, under tried-and-true principles of patent law, you can always patent a new and non-obvious improvement. Thus, if you leave something out of your patent application because of a vague or otherwise inferior description, someone else could file a patent application claiming that which you left out for themselves.

Before you file a patent application, whether a provisional patent application or non-provisional, take a critical look to see if someone who is unfamiliar with your invention would understand how to make and use the invention after reading your disclosure and reviewing any associated drawings. Also, make sure to describe the invention in a way that specifically describes your invention so that the reader will understand all the various permutations and that you are in possession of all variations.

In other words, you must provide something of an instruction manual for making and using, paying particular attention to describing modifications, specific versions and alternatives.

It is also very important to explain your invention while paying particular attention to unobvious or counterintuitive steps, connections or limitations. Also pay particular attention to any preparations that may be necessary before beginning the making or using process.

Maximize many illustrations

Good patent illustrations are the best way to cheaply expand any patent disclosure. Anything included in your drawings filed as part of the application are considered a part of the disclosure.

Use as many patent illustrations as you can.

Then, when you are describing those drawings in text, employ the aforementioned advice about describing what is shown in the patent drawing to someone who is blind. If you do this, you will wind up with an exceptionally detailed and very useful description of your invention.

Many inventors embark upon the onerous task of describing and then distinguishing the prior art. This is not something any patent attorney would do, although there are texts for inventors that suggest you do this very thing.

If you positively describe the prior art, you make admissions that will be difficult, if not impossible, to back away from later.

You never say anything in a patent application or during prosecution that is not necessary. If the patent examiner makes a rejection over certain prior art, you will need to distinguish that prior art from your invention.

You will, however, have the benefit of knowing what the rejection is and why the examiner finds it to be similar. That will allow you to make crisp and direct distinguishing statements rather than making over-broad generalizations that might come back to haunt you.

What's unique? Explain why

Notwithstanding the cautionary note about prior art above, it is quite important for inventors to articulate the patentable feature and/or unique contribution the invention is making to the industry. Why is this invention different and/or unique?

This should be explained in the text of an application, because to obtain a patent an invention must be new (i.e., never before done) and must not be obvious (i.e., not a trivial combination of things already known to exist in prior art).

One common mistake many inventors make is spending a tremendous amount of time discussing common, everyday components but failing to focus on those components, combinations or steps that really set the invention apart from the pack.

Specifically and explicitly mention what sets your invention apart and will make the invention patentable. I recommend that you stay away from saying things like "The only thing that makes the present invention unique is …" Rather, consider saying something like "one of the things that makes the present invention unique is …"

The second alternative is only slightly different but leaves the door open for you to argue later during prosecution there are other aspects that make the invention patentable. The first alternative would likely be construed as an admission and could be very difficult, if not impossible, to get around.

PRO TIP

Perhaps you should try to describe your invention in words in a way that would convey meaning to someone who is blind. This is a tough task, but the goal of the written disclosure is to provide verbal description that is much like a step-by-step, how-to manual.

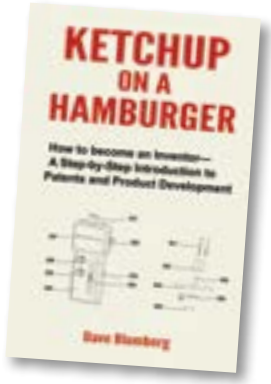
If you are trying to describe your invention to someone who cannot see, you will invariably find creative and enlightening ways to verbally get your message across.

However, do not let this suggestion fool you into thinking that drawings are not essential.

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.

Will His Debut Cut the Mustard?

OWNER OF 300-PLUS PATENTS OFFERS 'PRACTICAL GUIDE' FOR INVENTORS



A **PLANNED** quick sojourn through Justia Patents under Dave Blumberg's name can easily morph into an expedition: 10 pages of varied published successes as recently as this April, by himself and with a host of accomplished collaborators who include Segway inventor Dean Kamen.

As Blumberg nears retirement following a 30-plus year career as a microwave engineer that has spawned more than 300 patents, he figured now is a good time for his first book. "Ketchup on a Hamburger: How to Become an Inventor—A Step-by-Step Introduction to Patents and Product Development" is available on Amazon.

He modestly lays out a two-tiered plan.

"First, a short, readily accessible book—meant to be finished in one or two sittings—on patents and product development. Then, assuming the first book isn't too embarrassing, I'll follow up with one that dives a little deeper into the work I've done in microwave engineering, if I can translate that into something useful for readers."

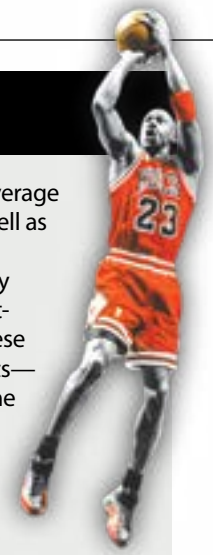
We'll give you a head start. As you may suspect, a microwave engineer isn't someone who works on the ubiquitous kitchen appliance that reheats your scrambled eggs. It refers to a specialized professional in electrical engineering whose main focus is the study, design and application of microwave technology.

But Blumberg's book has inspiration and education for all kinds of inventors. He says the first book is "part memoir, part practical guide—written for designers, engineers, garage enthusiasts and others who may not even realize they're inventing—or who are wondering if they are, what the actual criteria is, and how to access it."

This is a year of writing firsts for him, having also authored his first patent application. He welcomes input at Davebg2012@gmail.com, and certainly welcomes purchases through **amazon.com/dp/B0FH5H4636**. *—Reid Creager*

NOW STARRING: IP

Jordan Could Be Sports' IP GOAT



There may be debate as to whether Michael Jordan is the greatest basketball player ever. But there can't be any debate as to whether he is the greatest basketball player/sneaker salesman ever.

Few, if any, athletes in the history of sport have leveraged their name, likeness and success as well as Jordan has through intellectual property. The latest example comes via a July 15 report by *Women's Wear Daily* that the Air Jordan 3 Retro OG sneaker model will feature a "World's Best Dad" color combination in time for Father's Day 2026—to commemorate the 30th anniversary of Jordan's Chicago Bulls winning the NBA title on Father's Day in 1996, their first since Jordan's father, James Jordan Sr., was murdered in 1993.

The Air Jordan line, which originated in 1985, is a fashion statement around the world. The brand, with new releases every year, is but one component in his IP stable.

The Jumpman Logo is the foundation of the Jordan Brand, which is a subsidiary of Nike and worth billions of dollars. That brand also encompasses apparel and sports equipment often linked to limited-edition releases.

Reports have estimated that the Jordan Brand generates more than $3 billion per year, also aided by connected partnerships and endorsements involving Coca-Cola, Gatorade and Hanes.

Jordan doesn't just leverage his IP; he protects it as well as anyone.

On the next-to-last day of 2020, he won an eight-year battle against Chinese company Qiaodan Sports—which was decided by the Supreme People's Court in China. The dispute centered around the company name being pronounced "CHEEOW-dan," the transliteration of "Jordan" in Mandarin. He won only $46,000 but was more concerned about the principle of protecting his name.

In 2015, Jordan won an $8.9 million settlement against now-defunct Dominick's food stores for using his name in one of its promotions without permission.*—Reid Creager*

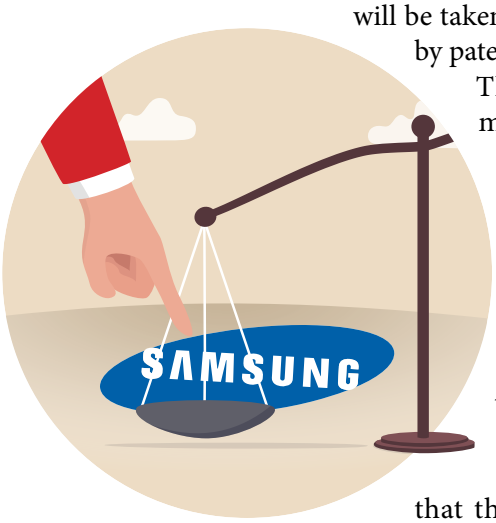
Score One for Patent Owners

U.S. ARGUES INFRINGEMENT CAN CAUSE IRREPARABLE HARM THAT MONETARY DAMAGES CAN'T FIX

BY GENE QUINN

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

A **STATEMENT OF INTEREST** filed by the U.S. government on June 24 in *Radian Memory Systems, LLC v. Samsung Electronics Co.* will be taken as extremely good news by patent owners.



The patent infringement matter, held in the United States District Court for the Eastern District of Texas, Marshall Division, had been filed by attorneys from both the U.S. Department of Justice's Antitrust Division and the United States Patent & Trademark Office (USPTO). It suggested that the court should find the existence of irreparable harm to be in favor of the patent owner.

The decision of the U.S. government to intervene with this statement, in a case between a non-practicing entity and one of the world's largest technology companies, is quite telling.

Ultimately, the government argument boils down to this: Patent infringement in many cases causes irreparable harm to the patent owner, and monetary damages are extremely difficult to calculate; therefore, monetary damages are insufficient.

The decision of the U.S. government to intervene with this statement, in a case between a non-practicing entity and one of the world's largest technology companies, is quite telling. (*Editor's note:* A non-practicing entity is a person or individual that holds patents but does not engage in the production of commercialization of products related to those patents.)

Although the real decision to watch will be that of the district court, and then the United States Court of Appeals for the Federal Circuit, it seems clear the trend is shifting to a return to the possibility of an injunction issuing to patent owners—even a preliminary injunction. And with the Department of Justice and USPTO intervening in this case so early, the case seems destined for the Supreme Court.

Details of case

Radian filed a complaint for patent infringement against Samsung. In seeking a preliminary injunction, Radian alleges that it developed and patented an innovative technology to improve management of flash solid-state drives (SSDs), specifically for use in enterprise and data-center operations.

Radian alleges it was pressured into joining the NVM Express (NVMe), which was the relevant standard setting organization. Radian refused because membership would have required Radian to offer a royalty-free license of its patented technology to NVMe members. Following Radian's decision not to join and freely give its patented technology to Samsung, Radian alleges NVMe members, including Samsung, began infringing.

In the preliminary injunction request, Radian argued it will continue to suffer irreparable harm in the form of both lost market opportunity and market position as a technology pioneer. Samsung countered that Radian failed to show irreparable harm—specifically arguing that Radian, as a non-practicing entity, only ever expects a royalty and thus monetary relief will provide full compensation.

Decisive loss of control

According to the U.S. government, "[A] valid patent is inherently a unique asset … And a valid patent has attributes both of personal property and of a public franchise, with the rights (like the right to an injunction) that the statute prescribes."

The U.S. filing continued:

"The loss of control over a unique asset is relevant to the patent infringement context too, as infringement deprives the patent holder of the ability to control to whom it licenses its products and the terms of that licensing.

"For example, patent owners who rely on licensing as part of their commercialization strategy often desire to control the scope of a license. This includes licensing only for certain claims, competitors, markets, fields of use, geographies, or time frames. These elements of control are valuable because a license grant provides explicit authority from the patent owner to make, have made, use, sell, and/or offer for sale the invention.

"Without the license, any of these activities would infringe the patent(s). Patentees may also desire specific terms such as arbitration provisions for breaches of the license, auditing of a licensee's sales, or royalty payments in a running royalty, lump sum, or a combination.

"Even when the patentee desires to license its patent to the defendant, a court-imposed reasonable royalty lessens the patentee's ability to control the scope and terms of its license."

The filing added, "[i]n cases of unique assets, courts have commonly found irreparable harm when damages are difficult to calculate."

Preventative measure

In addition to the prospect of an injunction giving patent owners important protections on how and to whom a license to their patented technology is given, the government argues that an injunction also helps prevent potential licensees from viewing infringement as economically efficient—which has become better known as efficient infringement (i.e., the rational business decision to infringe because there is no real chance an injunction will issue and little realistic chance the patent owner will ultimately prevail with any meaningful damages).

FOND FAREWELLS

Bill Atkinson, the engineer behind much of the Mac's early graphical user interfaces, died June 5 of complications from pancreatic cancer. He was 74. Among his contributions to Apple's computers were the invention of the menubar, the selection lasso, the "marching ants" item selection animation, and the discovery of a midpoint circle algorithm that enabled the rapid drawing of circles on-screen.

S. Daniel Abraham, an American billionaire who created Slim-Fast Foods and spent his life advocating for peace between Israel and its neighbors in the Middle East, died June 29 at 100. Slim-Fast, which gained popularity in the 1980s, featured a supplement for breakfast and lunch by combining a powder with skim milk. By 2025, Abraham had built a net worth of $2.4 billion.

IoT Corner

IoT News reports that the cellular IoT module market recorded 23 percent year-over-year growth in the first quarter of 2025, according to IoT Analytics' Global Cellular and Chipset Market Tracker & Forecast.

This marked the fifth straight quarter of expansion for the industry, indicating recovery from the inventory correction challenges that affected the sector throughout 2023.

The latest news builds on a 15 percent year-over-year increase in shipments during 2024.

Wunderkinds

Rose Moules, a fifth-grader at Watsonville (California) Charter School of the Arts, won The Eagan Family Foundation's Most Innovative Invention Award for her invention Safe Bathroom Solver at this year's California Invention Convention.

Rose explained: "On a plane, the bathroom is first-come-first serve. There is nowhere safe to stand. You can be waiting in your seat for someone to leave—but when they do, someone else jumps up and gets there before you. Sometimes the pilot makes you sit back down, and you have to start over.

"My invention allows you to press a button for the bathroom from your seat. So you enter a virtual queue and you are notified when you are next. I searched all over Google, TikTok, YouTube, and could not find anything like it. The only thing I could find was how dangerous it is to stand in line for the bathroom."

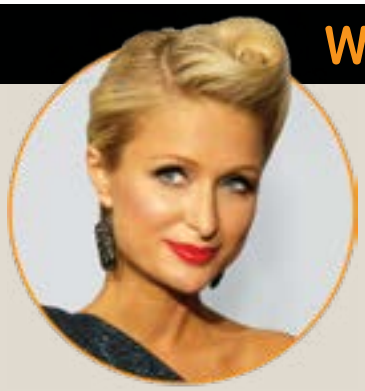
What IS That?

This **shark blanket hoodie onesie** comes with a fin and tail. It can wrap around the body so the wearer can slip his or her legs into the shark's mouth. Now, who remembers the Landshark skits from "Saturday Night Live"? Candygram ...

Get Busy!

The water sports product market is expected to grow from $40 billion to $58.5 billion spanning 2024-2032, per Global Market Insights. Dude! Consider **Surf Expo Orlando**, September 4-6 at the Orange County Convention Center. The biannual event returns in January. *surfexpo.com*

WHAT DO YOU KNOW?



1 **Paris Hilton has long claimed she invented the "selfie" in 2006 with which other celebrity?**
A) Britney Spears
B) Christina Aguilera
C) Shannen Doherty
D) Tyler Perry

2 **Which invention-related TV show aired first: "The Henry Ford's Innovation Nation," or "Shark Tank"?**

3 **True or false: Trade secrets are protected at both the state and federal level.**

4 **Which one of these is not a cartoon character inventor?**
A) Gyro Gearloose **B)** Professor Membrane
C) Paul Prototype **D)** Professor Pat Pending

5 **True or false: In the wake of the famous trademark for the term "three-peat," there is a trademark application pending for "4-PEAT."**

ANSWERS: 1. A. 2. "Shark Tank," 2009; "Innovation Nation," 2014. 3. True. 4. C. 5. True. Per Trademark Elie, the 4-PEAT trademark filing was in February this year by Fourpeat, LLC in Mount Holly, New Jersey. It was assigned serial number 99032016 by the United States Patent and Trademark Office. On July 17, its status changed to "Non-final Office Action Issued—Clarification Needed."

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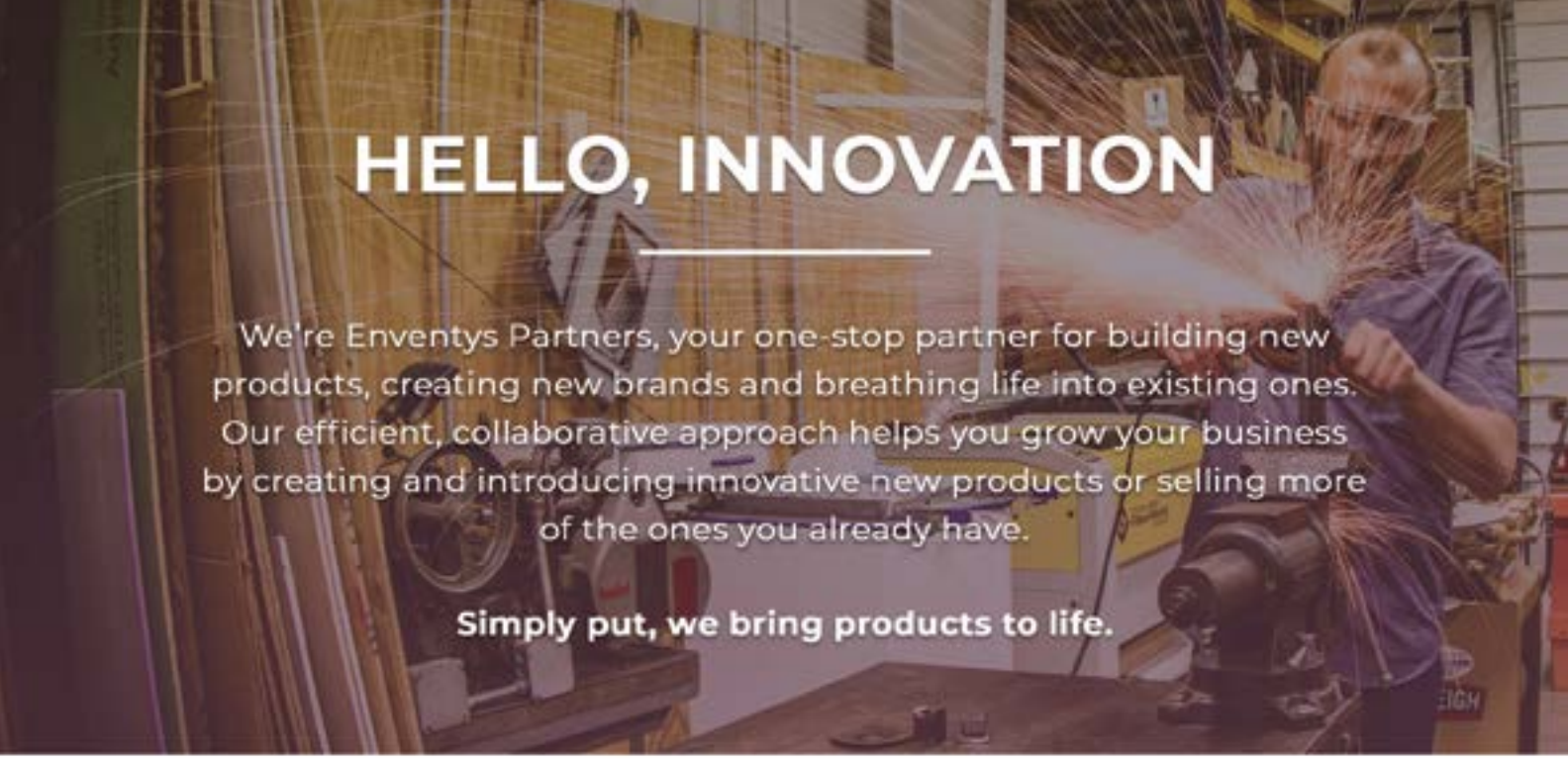

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