

Inventors

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DIGEST

The 45 RPM at 70
COLORFUL HISTORY
OF A BABY BOOMER ICON

What's Next in IoT
CONNECTED DEVICE
DEVELOPMENT

Net of Surprises
LITTLE-KNOWN FACTS
ABOUT INTERNET'S ORIGINS

OPERATION IPIQ

DR. GARY MICHELSON'S
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A Key Emphasis, And None Too Soon

For John F. Kennedy, Dr. Gary Michelson was born at least 30 years too late.

A 2017 article in the *Journal of Neurosurgery*, re-examining the back pain that afflicted the former president for all of his adult life, concludes that his four spine surgeries from 1944 to 1957 were largely futile despite the best intentions and medical expertise at the time.

In discussing the article by Drs. T. Glenn Pait and Justin T. Dowdy, *Science Daily* wrote: "The first two surgeries did little to improve JFK's condition and in fact resulted in severe complications and additional pain. The third operation was performed to remedy the effects of the second operation, and the fourth operation to clear out infection at the previous operative site."

This game of medical Whac-A-Mole was not uncommon at the time and can still happen today. Finding the true source of pain can be elusive in spinal surgery.

In fact, Dowdy's study did not dismiss earlier speculation that President Kennedy's use of a back brace may have played a role in his assassination: The theory is that JFK's tightly bound body sprung back to an upward position after the assassin's first shot, enabling the second, fatal blow to the president's head.

In the 1950s, it was typical in spinal surgery for the doctor to make a large incision across the abdomen and through the body cavity to get to the spine. This involved disturbing the intestines; recovery time was several weeks; and there was a great risk of infection. Today's procedures are generally minimally invasive, in part due to the more sophisticated equipment used.

Dr. Michelson, this month's cover subject, played a big role in that dynamic transformation.

But he wasn't just a visionary in terms of medical procedures and instruments. Dr. Michelson showed a keen appreciation for the importance of patents back when intellectual property was a term reserved only for attorneys and businesspeople. Now he is committed to educating the next generation of workers—and those who came before—about IP's importance in our tech- and legal-dominated world via his Michelson Institute for Intellectual Property.

When it comes to educating people about protecting their ideas and inventions, it's never too late.

—Reid

(reid.creager@inventorsdigest.com)

American innovation needs to hit the gym

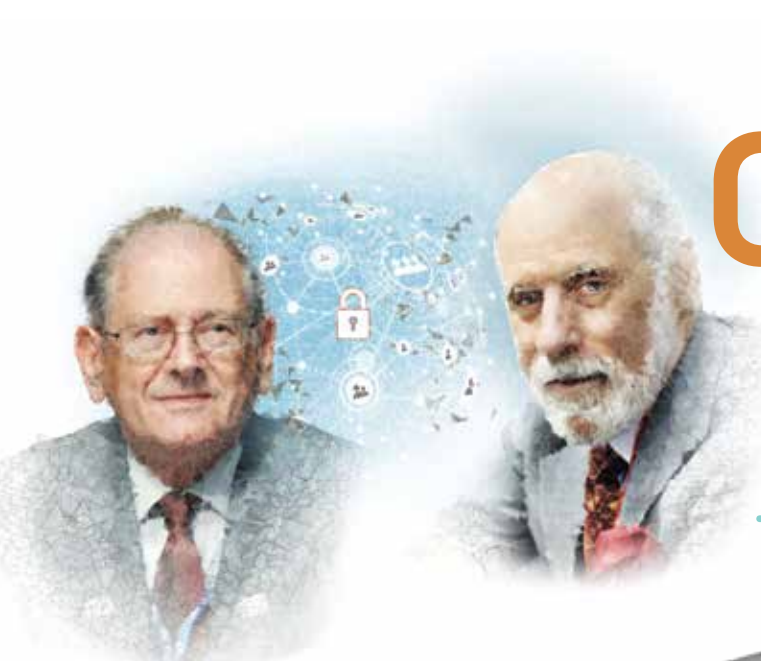


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Contents

June 2019 Volume 35 Issue 6

10

Features

- 24 Operation IP IQ**
The Michelson institute
- 28 The 45 RPM at 70**
Record's Colorful History

Inventor Spotlight

- 18 Lightening the Load**
Ergonomic Baby Carrier
- 22 New Anglers Angle**
Fishing Smart Sensor

Departments

- 7 Everybody's Talking**
Conversation Pieces
- 8 Bright Ideas**
Innovation That Shines
- 10 Time Tested**
Net of Surprises
- 13 Inventing 101**
The Right Target Market
- 14 Social Hour**
Better Instagram Stories
- 16 Lander Zone**
Inventing Accessories
- 34 Prototyping**
The Next IoT Wave
- 36 Patent Pending**
Nuts and Bolts
- 38 Eye on Washington**
Alice, 5 Years Later;
Music Industry's
Battle Over Licensing
- 46 Inventiveness**
Focus on the Fun
and Fascinating



22



ON THE COVER
Dr. Gary Michelson;
photo courtesy of
the University of
Southern California
and The Michelson
20MM Foundation

18



28

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

"Hey, Cut That Out! 5 Traits That Stifle Inventor Success" (November 2018):

Is it always best to see a patent solicitor first, or do it yourself? —**STUART PRICE**

We haven't heard the term "patent solicitor," but if you mean a patent attorney, many of the inventors and experts regularly featured on these pages highly recommend the retaining of an experienced patent professional. —Editor

"Prototypes: When Do We Need Them?"
by Jack Lander (March 2019):

As a first-time inventor, I found this article very informative! I know I could benefit from your seven-page sell sheet instructions! Thank you, Jack!

—**JOAN ECKSTEIN**

"A Mad Marketing Maven"
(February 2017):

I knew Earl (Madman Muntz) as a customer and friend. He was an incredible man. He insisted that I never smoke because of the pain he was suffering with end-stage lung cancer.

Thank you for all of your help and guidance.

—**STAN**

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

CHAMPIONS IN THE COURT

If you're seeking a trademark for an item using the word "Sox," pull up your knickers and get ready for a high, hard one under the chin.

The Boston Red Sox filed oppositions with the Trademark Trial and Appeal Board to two different trademark applications during the first week of April.

The franchise wasted little time after an individual filed an application to register the trademark "WORMSOX" to use

with apparel such as T-shirts, polo shirts, tank tops and sweaters. Of course, the Red Sox own many registrations attached to marks that contain the word "SOX" that appear on apparel. Those registrations have been held by the Red Sox for so long that they have been established as "incontestable."

The Red Sox noted that the applicant for the registration to WORMSOX is a resident of Somerville, Massachusetts, which is near where the Boston team plays its home games.

Also, the applicant filed his application on the same date that the Red Sox's Triple-A affiliate Pawtucket Red Sox (known as the PawSox), announced that it would be moving its club to Worcester, Massachusetts. The opposition references the

fact that Worcester is often referred to as "Wormtown."

Per the 360 Law blog, the company's application included a specimen that showed the name being used on a logo highly similar to the one used by the Boston club.

That same week, both the Red Sox and Chicago White Sox also filed an opposition to an attempt by a Minnesota company—Dairyland Sports Properties LLC—to register "Cow Sox" as a trademark for apparel.

The Red Sox are consistently vigilant against trademark application attempts that they deem a threat to their branding.

Last September, they filed an opposition against an attempt to register the trademark HAZEL'S GREEN MONSTAH RELISH. The applicants didn't respond to the opposition, resulting in a win off the field.



BRIGHT IDEAS

Chameleon

COLOR-BLENDING
FINELINE PEN

chameleonartproducts.com

Chameleon instantly blends colors as you write, without having to change pens.

To instantly blend colors, switch the cap or pop the top to another pen, leave it a few seconds and make vibrant, color-to-color blends. Tested fineliners lasted more than 32,000 inches, or a half-mile.

Twelve bright Chameleon fineliners that make 66 different color combinations will retail for \$20. Chameleon is also available in bold colors (24 pack), brilliant colors (48 pack), and has a coloring book. The product ships to Rewards backers in July.



Melange

THERAPEUTIC ROBE

kickstarter.com

Melange is a unisex, premium-grade, therapeutic robe that is the first of its kind to harness the power of Celliant® technology with an aim to boost energy levels, help you recover faster, and improve relaxation.

The technology has been scientifically proven to promote local blood flow and increase tissue oxygenation levels.

The robe is engineered using minerals that naturally cycle energy back into your body in the form of infrared energy. Infrared has been used to modulate sleep, protect against stress, and ease joint stiffness.

Melange will retail for \$200, with a July/August shipping timetable.





BrightLoc

2-IN-1 BIKE LOCK AND LIGHT

brightloc.com

BrightLoc's heavy-duty, watertight U-lock is constructed with hardened steel and a keyed double deadbolt for maximum security. It is combined with an advanced 360-degree lighting system.

Detachable light modules light up night rides to walking or camping. BrightLoc holds strong even under harsh conditions, including untraditional lock attachments such as jagged street signs. Other features include an LED key, headlamp and multiple mount points. Its modular pieces snap in and out for easy assembly.

BrightLoc will retail for \$120. It will be shipped to crowdfunding Rewards backers in August.



"A key ingredient in innovation is the ability to challenge authority and break rules."

—VIVEK WADHWA



Clipstands

VERSATILE CUSTOMIZATION GADGET

upwriteinstruments.com

Clipstands is a multi-use device that acts as a clip, stand and magnetic holder.

It can be used to prop up your phone. Advertise a company name on the magnetic clip by printing on the clip and affixing a metal-backed faceplate for sleek, layered marketing that is reusable. Clipstands can stand on a table or be worn in a shirt pocket or blouse.

The product's unique adapter allows it to fit to any instrument with a similar barrel (markers, pens, pencils, razors). When the self-adhesive metal strip is attached, it can hold many different small items. Clipstands retails for \$9.99. Customized bulk orders are available.

Net of Surprises

LITTLE-KNOWN FACTS ABOUT THE INTERNET'S ORIGINS
AND ITS 2 MAIN CREATORS **BY REID CREAGER**

VINTON CERF and Robert Kahn have always been generous in acknowledging the contributions of others to the beginning of the internet. So if they are the Fathers of the Internet, Nikola Tesla may be the grandfather.

For the many who claim that Tesla is one of history's most unheralded inventors, here's more: He experimented with the notion of a "world wireless system" in the early 1900s. As was often the case, he was well ahead of his time; it would be more than a half-century before the technology to build the internet came into being.

In the early 1960s, MIT's J.C.R. Licklider—a member of the Internet Hall of Fame—formulated ideas for an intergalactic network of computers. Soon after, the Advanced Research Projects

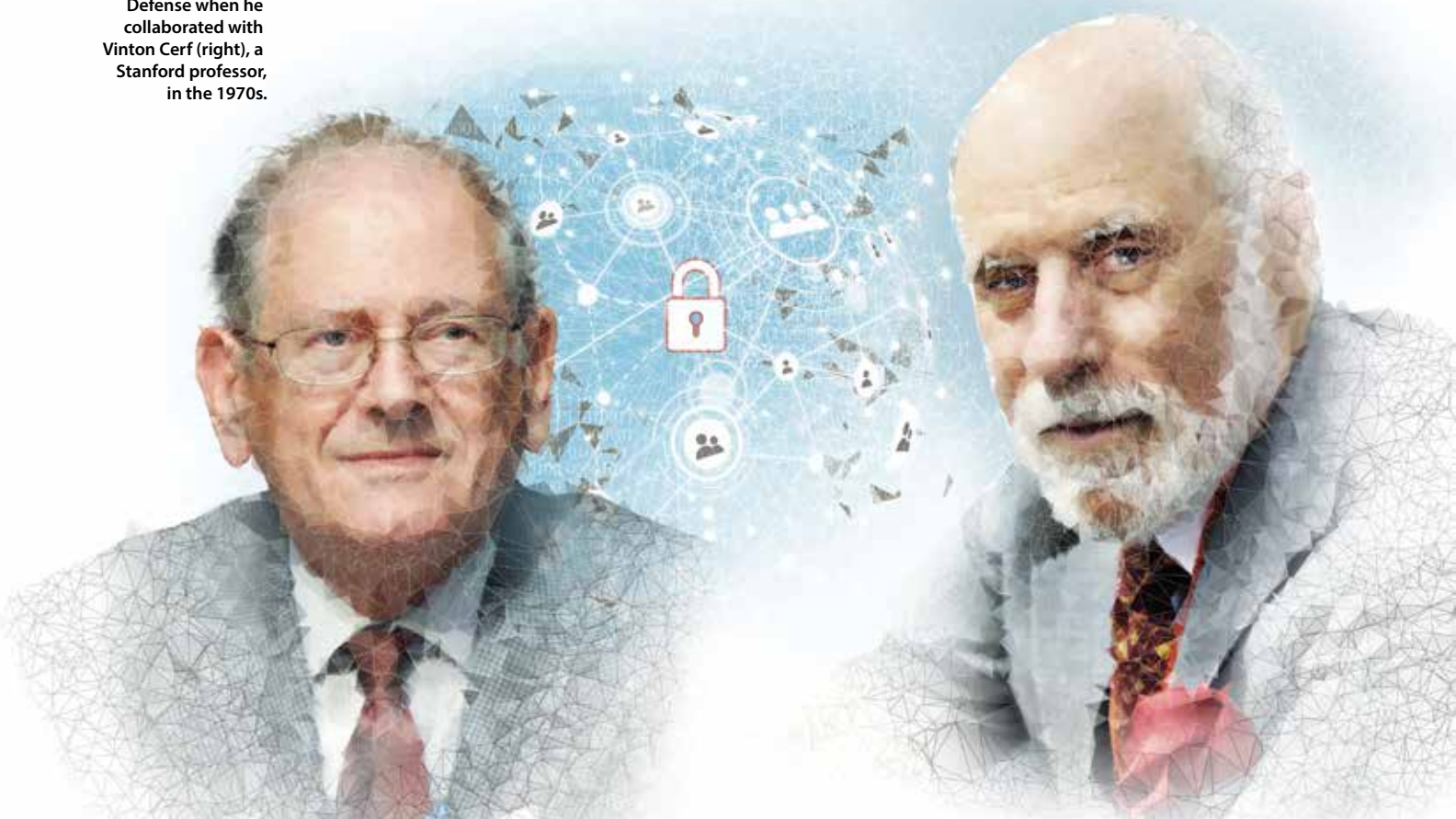
Agency Network (ARPANET), first funded by the U.S. Department of Defense, used a process called packet switching that allowed multiple computers to communicate on a single network.

Some more alphabet soup proved an essential ingredient in the internet recipe in the early 1970s. Computer scientists Cerf and Kahn developed Transmission Control Protocol and Internet Protocol (TCP/IP), setting the standard for how data could be transmitted between multiple networks so they could "talk" to one another.

ARPANET adopted TCP/IP on the first day of 1983. This paved the way for the network highway that became the internet, with Cerf and Kahn generally recognized as the revolutionary medium's primary inventors.

Earlier this year, Vinton Cerf revealed that his original internet had two major flaws.

Robert Kahn (left) was working for the Department of Defense when he collaborated with Vinton Cerf (right), a Stanford professor, in the 1970s.





Oops ... twice

Cerf, who turns 75 this month, says the development of the internet was a team effort involving tens of thousands of people. Those origins have been widely chronicled.

But earlier this year, he revealed that the original internet had two major flaws.

According to *Business Insider*, Cerf “basically didn’t set aside enough room to handle all the devices that would eventually be connected to it. Perhaps even more troubling, he and his collaborators didn’t build into the network a way of securing data that was transmitted over it.”

The space problem was understandable. When Cerf was designing the system in the early 1970s, he provided for a 32-bit addressing system that could support up to 4.3 billion devices—larger than the world’s human population at the time. How could he fathom that this would not be enough?

But by the 1990s and early 2000s, it was obvious that Cerf and other internet experts would have to update the protocols to make way for new devices that were connecting to the network.

The other flaw was security. As he rushed to get the internet launched, Cerf overlooked the fact that transmissions could potentially be read by anyone who intercepted them. There was also no way for a network to verify that a user or device was who or what it claimed to be.

Ironically, a popular security technology called public-key encryption was developed in the mid-1970s—around the time that Cerf was formulating the protocols underlying the network. But he was too hell-bent on finalizing the protocols.

Still, more than 40 years later, Cerf told *Business Insider* that it wouldn’t have been a good idea to build security into the internet when it launched because most of its users were college students who couldn’t be bothered with conceiving and remembering passwords.

Kahn’s role in funding

Kahn was working for the Department of Defense when he collaborated with Cerf, a Stanford professor, in the 1970s. Now 80, he is chairman, CEO and

president of the Corporation for National Research Initiatives (CNRI), which he founded in 1986 after 13 years with the U.S. Defense Advanced Research Projects Agency (w). When Cerf joined DARPA, Kahn was its director.

As technology improved throughout the decade, and because the internet mission was then a government enterprise, funding was an issue. According to (ironically) an internet bio on Kahn, the industry received “massive support from the Reagan Administration and private sector for the development of the internet.”

Momentum grew for development of the internet during the latter part of the 1980s, and by 1990 the private sector had donated more than \$500 million to the cause—a groundswell that made the front page of the *New York Times*.

Kahn and others worked with AT&T toward a signature stroke in the process, the world’s first internet browser and ATM, in 1990. Email and internet access were the catalysts for the phenomenon.

THE AL GORE INTERNET MYTH

We told you three years ago, but for those of you who missed it we’re telling you again. Al Gore never said he invented the internet.

Gore’s claim in a 1999 interview was that “during my service in the United States Congress, I took the initiative in creating the internet.” The then-vice president was referring to his overseeing organized efforts that led to the internet.

Even had Gore said he invented the internet, he wouldn’t have been far off. Vinton Cerf said: “The internet would not be where it is in the United States without the strong support given to it and related research areas by the vice president in his current role and in his earlier role as senator ...

“As far back as the 1970s, Congressman Gore promoted the idea of high-speed telecommunications as an engine for both economic growth and the improvement of our educational system. He was the first elected official to grasp the potential of computer communications to have a broader impact than just improving the conduct of science and scholarship...”

“His initiatives led directly to the commercialization of the internet. So he really does deserve credit.”



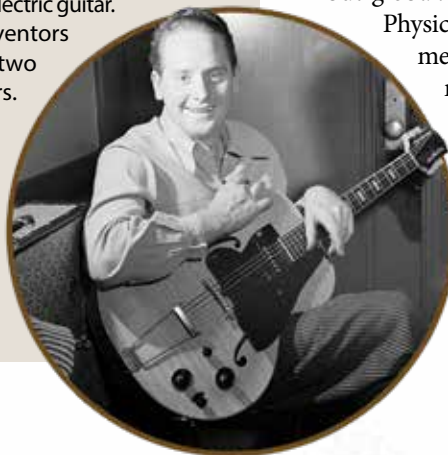
INVENTOR ARCHIVES: JUNE

June 9, 1915: American inventor **Les Paul** was born. He invented the Les Paul electric guitar, sound-on-sound, the eight-track recorder, overdubbing, the electronic reverb effect and multitrack tape recording.

He is best known for transforming music with his invention of the modern, solid-body electric guitar.

A member of the National Inventors Hall of Fame, Paul held at least two patents related to electric guitars. The first (U.S. Patent No. 3,018,680) was issued in 1962. The other (No. 3,725,561) was issued in 1973.

Paul was inducted into the inventors hall of fame in 2005, four years before his death at 94. He had been inducted into the Rock and Roll Hall of Fame in 1988.



With complex rules and protocols now in place, Timothy John Berners-Lee invented the World Wide Web 30 years ago. The British scientist developed a system that could view web pages (hypertext documents) through the internet.

The Internet Hall of Fame refers to the World Wide Web as “an Internet-based hypermedia initiative for global information.” However, when it was conceived, the web’s target was anything but global. According to CERN, the European Particle Physics Laboratory where Berners-Lee worked, it was meant to “meet the demand for automated information-sharing between scientists in universities and institutes around the world.”

Berners-Lee wrote the first web client and server in 1990. He created specifications of URIs, HTTP and HTML that were later refined.

Some have even referred to him as the Father of the Internet, but its true patriarchs will forever be identified as Cerf and Kahn. 📧

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Identifying the Right Target Market

MARKET SIZE AND PRICING ARE TWO ESSENTIAL CONSIDERATIONS **BY DON DEBELAK**



A **MARKET** is a term used for different ways companies might sell their product. For example, a toy manufacturer can sell through these channels:

- Major retailers such as Target and Walmart.
- Specialized or smaller toy stores.
- Amazon or other toy internet retail sites.
- A Facebook store.
- Your own website.
- Catalogs.
- A “sold-on-TV” type of ad campaign.
- Ads in children- or parent-oriented magazines.

Identifying the right target market can often be the difference between success and failure for new products. The right market will be more willing to accept, and ready to pay more for, the right product—and the wrong market will be slower to accept your product and will require more marketing efforts, cutting down on profits.

So choose your target market carefully. There are many factors that determine the right target market, but two important ones are market size and pricing.

Identify market choices

Your first step is to identify your market choices—i.e., which markets other smaller companies are successfully using to sell their product. The easiest way to do this is through trade magazines or trade shows.

An internet search can show the names of several trade magazines. Start reading those magazines and you will find articles related to different ways companies sell their products. Attend a trade show if possible and talk to other small manufacturers to see how they are selling their product.

A good spot to gather intelligence about how end users are buying products is [facebook.com/graphsearcher/](https://www.facebook.com/graphsearcher/). On the top left of the page is a search box. Just enter what type of group you are searching for, and you will see a list of Facebook groups.

Become a member of those groups. Typically, they will allow you to post questions such as where you last bought your type of product.

The right market size

Many inventors want to enter a big market with lots of customers. This is most often a mistake.

Your marketing efforts (unless you have a huge marketing budget) will probably be more like a drop in a bucket than a big splash, and it is unlikely that consumers will notice.

Choose a market small enough that you can make it notice your marketing efforts. As your budget grows, your market can expand—but consider what funds and time you have now for marketing your product.

Your market maybe be local, including specialty shops or boutiques. You could sell just through one retail outlet or through catalogs when starting out.

Pricing, inventor costs

Most inventors don’t realize all of the hidden costs in selling a product. For instance, selling to retailers through distributors means the distributor takes a percentage of the wholesale price (sometimes more than 30 percent), and then the retailer often takes 50 percent of the retail price (double the wholesale price).

So if you decide to sell products this way, which many inventors do, make sure that your target customers are willing to pay a high enough price so you can produce your product and still make a profit on only 70 percent of the wholesale price, or, conservatively, 35 percent of the retail price.

Conduct market research to determine what price consumers are willing to pay. If they aren’t willing to pay a price that allows you to make a profit, you either need to choose different target market with different customers who are willing to pay more; find a different distribution channel where distribution costs are less; or rework your product so it is cheaper to make but still valued by your target customers. ☞

Don Debelak is the founder of One Stop Invention Shop, which offers marketing and patenting assistance to inventors. He is also the author of several marketing books, including Entrepreneur magazine’s *Bringing Your Product to Market*. Debelak can be reached at (612) 414-4118 or dondebelak34@msn.com.



Pump up Your Instagram Stories

TIPS FOR CREATING QUICK, LASTING IMPRESSIONS
WHEN MARKETING YOUR INVENTION **BY ELIZABETH BREEDLOVE**

IT'S BECOMING increasingly important to utilize Stories if you want to be seen on Instagram. According to Buffer, more than 500 million people watch Stories on Instagram each day.

You also should ensure that your Stories stand out among the others inundating every news feed. The last thing you want is for Stories about your invention to be forgotten—or perhaps even worse, skipped over after one slide.

Here are tips for creating content for Instagram Stories that is memorable and leaves a lasting impression.

Capture people's attention in the first slide. Data show that the longer your Story, the fewer people will watch it until the end. This doesn't mean that you need to keep all Stories to one slide, but it does mean that you need to capture people's attention from the beginning. Consider traditional news writing, for example: The first sentence always summarizes the story. Take inspiration from this and jump right to the point, rather than using a few slides to build up to your point.

Experiment with longer video. Nonetheless, there is a place for longer videos. Instagram only allows you to film 15-second clips within the app, but there are many other apps that allow you to film longer videos and then splice them into 15-second clips for Instagram. Some content ideas will work better with longer video, such as a tutorial or demo, so keep this option in mind!

Keep up the energy. Instagram Stories have a more casual, candid vibe than Instagram posts. However, it's still important to put your best self into your Stories. Try to keep a positive spirit on display in your Stories. Excitement is contagious. If you're excited about your invention in your Stories, your viewers will get excited about your product, too.

Make your Stories interactive. Perhaps the best way to make your Stories more engaging is to provide ways for others to engage with them! Fortunately, the Instagram app offers quite a bit of functionality that allows users to interact with Stories.

For example, suppose you are considering offering your invention in additional colors or designs. You can post the options in Stories and use Instagram's poll feature to have viewers vote for their favorite. You could do something similar by offering options for different product features, or even ask users which use case they prefer.

Similarly, if you want to ask more open-ended questions, you can use the Questions feature. One thing that makes this feature unique and interactive is that Instagram allows you to anonymously share things viewers submit using the Questions feature.

Many Instagram users use this feature to host a Q&A session, where they have users submit questions to them. Then, they share the question and provide the answer. Consider hosting a "meet the inventor" series using this feature, or offer to answer any questions users have about your invention.

The emoji slider feature is another way you can invite your followers to participate in your stories. For example, suppose you are launching a new product in a month. You could post a Story asking people if they are excited for your product to launch, and include an emoji slider with an excited-face emoji that viewers can use to "express" their excitement.

Finally, consider using the countdown sticker. This newer feature lets you set up a countdown and lets viewers set a reminder at the end of the countdown. If you are hosting a flash sale on your website, for example, you could start to tease the sale 24 hours in advance and set up a countdown on Instagram to amp up excitement about the sale.



Share other Stories and posts on your own Stories.

Interactivity is a two-way street. If you want other people to interact with your Stories, make sure to interact with other accounts.

A fun way to do this is to share other Stories and posts in your own Stories. Just select the “share” icon that looks like a paper plane, then tap “Add post to your story.” This is a great idea when other accounts mention your product!

Not only is it a way to engage with others, it also builds social proof by showing that other people love your invention. Similarly, if you post a Story about another product or brand, make sure you tag them so they see your post and hopefully share your Story!

Use Highlights to curate content. Stories only last for 24 hours, which can be disappointing when you work hard to create content with which followers can engage. This is where Story Highlights become helpful: You can save Stories to your profile so your viewers can refer back to them!

Focus on grouping your stories by subject. For example, if you post Q&As occasionally, save them all to the same Highlights with specific titles, making it easy for your fans to find what they are looking for. Considering doing the same for behind-the-scenes sneak peeks, polls, and more.

Use swipe-ups when applicable. If you have more than 10,000 followers or have a Verified Instagram account, you'll be able to add links to Instagram

Stories that users can access by swiping up. If you have this feature, use it! Engagement is great; sales are better.

The reason you have Instagram as part of your marketing strategy is to increase your sales. Swipe-ups let followers interact with your Stories while also making it easier for you to make sales.

Finally, ask your followers what they want to see.

This may be the most obvious but most overlooked method for creating more interesting, memorable and engaging copy.

No one knows which types of content your followers want to see better than your followers themselves, so ask them. You can do this in Stories, or in an Instagram post.

You can gather this data in many different ways: Ask viewers to DM you, use the Questions feature, or offer two different options in a series of polls. It's up to you.

Now it's your turn. Good luck creating interesting, memorable stories! 📦

Elizabeth Breedlove is marketing strategy manager at Enventys Partners, a product development, crowdfunding and inbound marketing agency. She has helped start-ups and small businesses launch new products and inventions via social media, blogging, email marketing and more.



Inventing Accessories

HERE'S A POTENTIAL OPPORTUNITY, BUT KNOW THE CHALLENGES OF BEING FIRST TO MARKET **BY JACK LANDER**

MY WIFE and I were recently awakened by a loud noise coming from the ceiling above our bed. It must be something huge and fierce, I thought.

Mary grabbed a flashlight, pulled down the attic stairs, and cautiously ascended. (Her side of the bed is closest to the stairs.) A few seconds passed and I heard a drawn-out, sentimental “awe.” I knew that at least the monster was not fierce.

Mary came down smiling. “It’s a mother raccoon and her babies,” she said. Well, I have nothing against raccoons, but I prefer they don’t use my attic as their maternity ward. What now?

Our condo association takes care of such things. It dispatched two fellows in hazmat suits and leather gloves extending to their elbows.

“Where’s the Havahart® trap?” I asked. The answer was that the association didn’t use these humane contraptions. The workers removed the babies in a bucket and said that the desperate mother would eventually leave the attic and look for them.

They placed the bucket on the ground next to the point where she had started her climb to the roof. She would hear them crying when she came down and transfer them to another safe location, they told us.

This seemed a risky process for reuniting the mother and her brood, but they assured me that it was effective 95 percent of the time. It was that 5 percent that concerned us. I wished we had not informed the condo association but had trapped the mother, alive and uninjured, and moved her and her babies to the nearby woods ourselves.

My eureka moment

In any case, thinking about the Havahart trapping process, it occurred to me that we would have to check on the trap perhaps several times unless we

heard her struggling to get free. But we would have had no assurance that we would hear it from other rooms in our home.

And if the unwelcome guest were a mouse and her babies, it’s almost certain that we would not have heard her. We would want to move the mouse mother and her babies as soon as possible after trapping, and it made no sense to torture her or her babies by separating them any longer than a few minutes.

Surely the people who are concerned about needlessly killing animals, even so-called vermin, and who use Havahart traps, will also be concerned about avoiding psychological torture to a trapped animal—especially a new mother that has offspring to nurse.

Years ago, I trapped a large rat in my garage using a Havahart trap. My guess is that he had been in the trap for at least three hours before I discovered his plight. Call me anthropocentric if you wish, but that rat’s glaring eyes told me he bitterly hated me. I couldn’t blame him (or her).

Aha! The eureka moment! What is needed is a trap alarm—a loud, high-pitched signal that beeps every 10 seconds or so.

Is such an alarm patentable? Almost certainly, it is not.

Smoke alarms have used this method of warning us of a low battery for many years. But a novel way of triggering the alarm from the action of the trap door closing might be patentable, as well as a novel way of attaching the alarm to the cage.

Jump in if you love animals as Mary and I do. I’m too busy to take advantage of this *potential* invention. Until you flesh it out with details that may be novel, it is simply an idea for an invention. Rushing to a patent attorney without detailed features is a mistake that many inventors make.

Rushing to a patent attorney without detailed features is a mistake that many inventors make.



Opportunity's risk, reward

The main point is that even though products such as the Havahart trap have been around for many years, there may be opportunities to invent accessories that enhance their use. And I speak to the entrepreneurs as well.

Not all inventions need a patent or can qualify for one. Sometimes it is best to produce and market.

Another caution: Being first in the market is risky, as I pointed out in the April issue of *Inventors Digest*. The middle of the Goldilocks Zone is the safest, because it assures that the market is established. If your invention's benefits are attractive, and its price is competitive, you should get a share of that market.

However, being the first to market often means that you may have to advertise to make the market aware of your product—and advertising is generally much too expensive unless you are launching a high-priced product, typically above a hundred dollars.

The exception is that novel products are often introduced to the market through catalogs. That's the catalog's niche in the overall marketplace. But in the case of a novel Havahart trap alarm, it is unlikely that catalogs would take on the product unless they also sold the traps. Fortunately, there are a few catalogs

listed under “catalogs on pest elimination,” such as pestcontrolsupplies.com.

Amazon.com is also an active market. The first three pages of Havahart traps shown on Amazon.com list 75 trap entries in all and did not show any trap alarms. If the alarm can squeeze into those first three pages, you'll be assured of sales.

It is best to get your product into the catalogs before approaching Amazon, however. Many catalogs won't take on your product if it is already sold by brick-and-mortar retailers or Amazon.com.

The moral of the story is that an invention should be considered as an accessory until we conclude that it isn't. And accessories can ride to market on the coattails of the product they complement.

Finally, if you hear a loud noise in your attic, be very careful. It may not be a mother raccoon and her five adorable babies. 🦊

Jack Lander, a near legend in the inventing community, has been writing for *Inventors Digest* for 23 years. His latest book is *Marketing Your Invention—A Complete Guide to Licensing, Producing and Selling Your Invention*. You can reach him at jack@inventor-mentor.com.



Lightening the Load

ERGONOMIC, STRAPLESS BABY CARRIER
WITH STORAGE CATCHES ON WITH PARENTS

BY EDITH G. TOLCHIN



Tammy Rant relaxes with her family (clockwise from left): Norah, Dan, Dylan and Bailey.

I'VE been manufacturing baby products in China for many years. I recently came upon a baby product with a catchy name, TushBaby.

I contacted the inventor, Tammy Rant, who founded California-based TushBaby Inc. She is a busy wife and mom of three little daughters, including a newborn.

The feature that I like best about this product is that it distributes the baby's weight evenly, allowing for comfortable carrying without stressing one's posture. And who doesn't love lots of storage room for baby's and parents' odds and ends?

Edith G. Tolchin (EGT): How does TushBaby work, and what are the distinct advantages over other carriers and similar products?

Tammy Rant (TR): TushBaby is a unique, strapless baby carrier designed to help caregivers carry their kids comfortably, stash their stuff conveniently, and save their backs. With TushBaby, you can ditch the sacks, packs and annoying strap-ins. This soft, ergonomic baby carrier sits right above your hip. It just takes one safe, sturdy buckle to put it on.

"I'll never forget wearing that first model to a local park, where I was practically tackled by 12 mothers and fathers asking where they could buy one." —TAMMY RANT

EGT: Please tell us about your background, and what led to this invention.

TR: I've been in software sales for the last 10 years. Five years ago, I had my first child and since then I've had two more.

I was shocked that I couldn't find an easy, comfortable way to carry my kids, and I knew other parents had the same problem. It was a pain in my arms and a strain on my back to shift my kids from hip to hip every five minutes.

Strollers were too bulky. Strap-in carriers were too complicated. And wraps and sacks were too hot and sweaty. So I created my own solution with TushBaby, an ergonomic hip-seat that evenly distributes weight to reduce back, arm, and hip strain, and has built-in storage so parents don't have to lug around three bags. TushBaby was truly born out of pure and simple necessity.

EGT: How did you create your first prototype? How many tweaks did you need?

TR: I asked my sister to draw up the concept I had in my head. And then I sent her renderings to a small manufacturer to create the prototype.

I'll never forget wearing that first model to a local park, where I was practically tackled by 12 mothers and fathers asking where they could buy one. Right then I knew I had a real problem-solving product on my hands, and I began working closely with designers, manufacturers, and pediatricians to create a safe, ergonomic hip-seat carrier for caregivers of any age.

It took 12 iterations until I got it just right—though now, of course, I'm refining the style and adding a few more features.

EGT: Please share your patent process.

TR: I've learned much more about patent law than I ever anticipated I would! My sister happens to be an IP attorney with the biggest law firm in the world, so she knew exactly who to refer me to for product patent advice and applications.

I spent a lot of time reviewing the design and utility of my product with my attorney and ended up applying for four patents. We are planning to apply for one more, since we are now testing some new features for a spring release of a new version.

EGT: Have you done any crowdfunding in addition to appearing on "Shark Tank"?

TR: As soon as I was accepted on "Shark Tank," I launched a Kickstarter campaign to gauge customer interest and raise money for manufacturing. Kickstarter BLEW UP—earning \$124,000, which was well above the \$10,000 value that I'd set.

During that month-long campaign, our product was featured on BuzzFeed, Parents, Good Housekeeping and more than 15 major outlets, garnering over 60 million views. We went viral in a matter of weeks!

By the time I got on "Shark Tank," I was feeling pretty good about our business potential. But it was still terrifying getting in front of the sharks without having any sales numbers—not to mention, I was five months pregnant and still suffering from H.G. (which is like morning sickness on steroids).

I only partly remember rattling off my pitch, sending the babies off the stage, and then answering all their questions. All the adrenaline made the experience blur. And even though they grilled me, I was thrilled to get a deal with Lori Greiner—especially after two other sharks had pulled out.

EGT: How many styles, fabrics, sizes and colors have you created?

TR: We launched TushBaby with two colors—black and grey—and one size, along with an extension belt add-on. We're about to launch four colors (black, grey, cheetah and camo) with new zipper and button details. We also now offer two sizes: petite and average, and the extension belt for more room.

EGT: How has the Consumer Product Safety Improvement Act affected the way your product is being manufactured? What kind of production testing and certifications are required for TushBaby?

TR: We comply with all the required testing for the Consumer Products Safety Commission and beyond. Since we were already using high-quality materials that passed global standards, no new requirement impacted us other than needing to do additional testing.

It took 12 iterations to get the TushBaby just right.

EGT: Are you manufacturing in the USA, or overseas?

TR: We're manufacturing in China but distributing from five locations in the USA:



Fresno, California; Carlisle, Pennsylvania; Mesquite, Texas; Carol Stream, Illinois; and Columbus, Ohio.

I've gotten used to working late nights or in the middle of the night to be on Skype calls with my manufacturers. Now I have a newborn that's up all night, so lately I don't need to set middle-of-the-night alarms. I've got one on automatic!

My manufacturers are extremely professional and fluent in English, so there's no communication barrier—which is immensely helpful because the level of detail we discuss would be very challenging otherwise.

EGT: Have you encountered any obstacles in product development?

TR: Let me count the ways. I had one manufacturer try to steal my design before producing it. A shipping container with my first order of a thousand TushBabies was delayed by three weeks. Customers were not happy!

And then a bunch of cheap knock-offs came out right after my Kickstarter campaign. The companies didn't just take my idea; they also used my branded copy and photos of my own kid! It's been quite a learning process. And I've learned a lot.

EGT: How are you selling this product, and who handles your PR?

TR: I'm selling this product through Shopify at Tushbaby.com, and on Amazon. My co-founder, Sara Azadi, handles our PR.

EGT: Are you planning on increasing your product line?

TR: You bet! We have quite a few baby products up our sleeves, but I'm not going to give too much away.

EGT: Any advice for novice inventors?

TR: Don't give up. Keep pushing through. Push through the obstacles, the sleepless nights, the self-doubt, the daily struggle, and the haters. No one can bring you down except yourself. ☛

Details: Tammy@tushbaby.com

Books by **Edie Tolchin** (egt@edietolchin.com) include "Fanny on Fire" (fannyonfire.com) and "Secrets of Successful Inventing." She has written for *Inventors Digest* since 2000. Edie has owned EGT Global Trading since 1997, assisting inventors with product safety issues and China manufacturing.



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A New Angle for Anglers

SMART SENSOR FOR FISHING RODS PROVIDES KEY DATA EACH TIME ON THE WATER **BY JEREMY LOSAW**

Cyberfishing has an LCD screen for user feedback and Bluetooth connectivity to send back data to a smartphone for analysis.

A **BAD DAY** of fishing is better than a good day at work, or so the classic bumper sticker says. However, it is no fun to spend a day at your favorite fishing spot and leave without the thrill of the catch.

Although technology such as fish finders have helped anglers find the right spots, they provide no analytics. Diehard anglers may take copious notes, but that is often impractical on the water when your hands have to hold the fishing rod.

Inventor Vitaly Pchelnikov—a seasoned angler who understands the frustration of fruitless days out fishing—has developed the Cyberfishing device to give anglers key insights about their fishing trips.

Cyberfishing is a smart sensor for fishing rods. It attaches to any fishing rod with heavy-duty elastic bands and collects data while you fish. At just 9 grams, it has little effect on the feel of the pole and can record data such as number of casts and put a time stamp on your catch.

It has an LCD screen for user feedback and Bluetooth connectivity to send back data to a smartphone for analysis. When a fish is caught, the user touches the face of the device to record the catch, the location and environmental data. The device is waterproof, and the app is free to download.

The essential workaround

Pchelnikov's theory was that if anglers had detailed data of where, when, and the conditions when a fish was caught, it could help predict how to fish in future trips. However, counting casts, recording strikes and catches, and chronicling the conditions for every trip is cumbersome and takes away from the joy of fishing.

Using a smartphone could help with notes, but it's not always convenient to use on the water.

"We needed a tool to make it easy to access your phone instead of taking your phone from your pocket. Sometimes your hands are dirty, it's inconvenient and you could be fishing in water up to your chest," Pchelnikov said.

To work around that problem, he decided to put sensors on the pole to monitor casts and send data to the smartphone so the angler could focus on the fishing.



“We needed a tool to make it easy to access your phone instead of taking your phone from your pocket.”

— VITALY PCHELNIKOV

The first prototype came together in a few months. The first iteration was not very refined and consisted of a few sensors that were banded to a fishing rod, and a GSM module to move the data to the cloud via the cellular network.

However, Pchelnikov found that the GSM chip was too much of a battery hog for the size of the device. That was omitted from future iterations, in favor of using the phone as the data transport mechanism and GPS sensor.

He found an app developer to create a functional app to receive the data. This allowed him to perform the crucial early testing. In the initial testing, it was difficult to accurately tell when a cast was made.

“Every fisherman has a different technique,” he said. “If you use a very light cast, the software cannot recognize (the cast). We never stop developing our software. The algorithm is very important for us”—a technical challenge that the team is continuing to refine.

Protection and processes

Pchelnikov and the Cyberfishing team filed all of their intellectual property in China. Because the product is a small electronic device, they felt that if it was infringed upon, it would likely be from someone in that region so it was important to have patents filed there. He conceded that his patents are a secondary strategy for IP; brand and market penetration are more important to the product’s commercial success.

Finding a manufacturing partner was not a difficult challenge. Pchelnikov spent many years working in the fishing supply industry and had many Asian factory contacts.

Through his network, he was able to find a factory that manufactures smart watches and had an interest in making the product. Cyberfishing has many of the same components and a similar structure to



a smart watch, so it was a perfect fit. He was able to manufacture a beautiful device with a screen and the requisite waterproof specification at a price that was appropriate for his consumer base.

Cyberfishing was launched at this year’s Consumer Electronics Show. Pchelnikov feels that Cyberfishing is more of a technology company than a fishing company and wanted to launch there first; his faith in the strategy led to Cyberfishing winning a 2019 CES Innovation award.

He has followed that launch by exhibiting at 11 other shows around the globe in a big push for brand awareness and customers. The product started shipping early in the second quarter this year and has sold thousands of units.

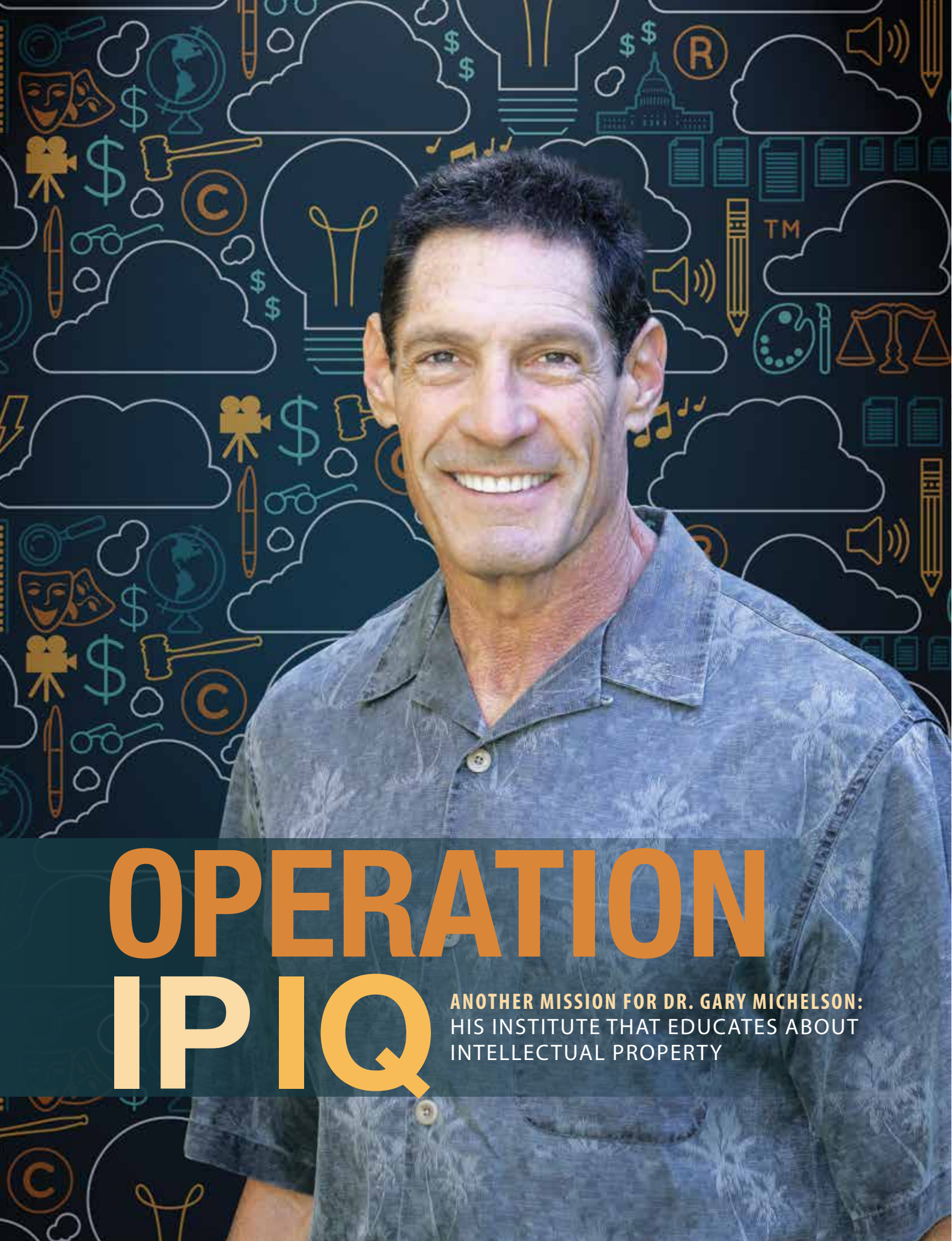
Pchelnikov is excited by the progress while continuing development work on the product. He is constantly refining and updating the sensing algorithm and plans to release a fly fishing mode in the app this year. 🐟

Details: cyberfishing.com

Vitaly Pchelnikov (left) celebrates an award with Anastasiia Pchelnikova, Egor Pchelnikov and Oleg Harlamovs.

Jeremy Losaw is a freelance writer and engineering manager for Enventys. He was the 1994 Searles Middle School Geography Bee Champion. He blogs at blog.edisonnation.com/category/prototyping/.





OPERATION IPIQ

ANOTHER MISSION FOR DR. GARY MICHELSON:
HIS INSTITUTE THAT EDUCATES ABOUT
INTELLECTUAL PROPERTY

DR. GARY MICHELSON has wanted to help people for as long as he can remember, which includes a time he would like to forget.

He recalls sitting at his grandmother's kitchen table as a 7-year-old and smelling her skin burning on the stove. She suffered from syringomyelia, a crippling spinal disease that causes the loss of sensation to pain and temperature in the extremities, especially the hands.

The boy saw the flames passing through her fingers. He screamed, and she quickly doused her hand under the faucet. "One day you'll become a doctor and you'll fix me," she told him.

This unforgettable anecdote is from the book published by the billionaire inventor and spinal surgeon, "The Intangible Advantage: Understanding Intellectual Property in the New Economy (2016)."

Billed as the first IP book for everyday people, it is part of a larger philanthropic mission: the Michelson 20MM Foundation, which supports innovation in education and higher learning initiatives. The Michelson Institute for Intellectual Property, an initiative of 20MM, attempts to arm educators and the innovation arena with the tools to educate everyone about IP.

Inventing solutions

"I did not start out to be an inventor," Dr. Michelson says in the book. "I wanted to be a doctor."

Improving people's quality of life and giving back are second nature to him. Born and raised in Philadelphia, he worked to put himself through college and medical school.

From the outset of his medical career, he worked to improve the unreliability and low success rates of spinal surgeries. Dr. Michelson spent the next 20 years developing new implants, surgical procedures, and the instruments needed for those procedures.

"Michelson tools" and procedures resulted in diminished blood loss, pain, disability, and recovery time associated with previous procedures. These new processes require minimal hospital time; many of them can be done on an outpatient basis. The likelihood of success for these newer procedures has been consistently high, with substantially times for return to full activity.

Throughout the world, Dr. Michelson's procedures have become the most dominant means of treating common spinal disorders, as well as those which are the most debilitating. He is the sole named

inventor of more than 950 issued patents or pending applications throughout the world, and has the rare distinction of being inducted into both the National Inventors Hall of Fame (2011) and the National Academy of Inventors (2014).

In 2005, medical device company Medtronic purchased the majority of Dr. Michelson's patent portfolio of spinal surgery inventions for \$1.35 billion. Before and since, he has devoted much of his life to sharing his wealth to benefit others. His philanthropic work includes:

- The Michelson Medical Research Foundation (2005), with an initial gift of \$100 million. It funds cutting-edge medical research that would be unlikely to receive funding from conventional sources.

Throughout the world, Dr. Michelson's procedures have become the most dominant means of treating common spinal disorders, as well as those which are the most debilitating.



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- Also founded in 2005, the Michelson Foundation for Animals is directly involved in saving and improving the lives of companion animals. Michelson FAF is reducing the number of animals coming into municipal animal shelters to be euthanized by creating and funding free and low-cost spay-and-neuter facilities.
- In 2014, Dr. Michelson and his wife, Alya, gifted \$50 million to the University of Southern California to fund the creation of a convergent bioscience center for producing real-world medical breakthroughs in real time.

USC Provost Michael Quick, USC President C.L. Max Nikias, Alya Michelson, Dr. Gary Michelson, USC Dornsife Dean Amber D. Miller, and USC Viterbi Dean Yannis C. Yortsos cut the inauguration ribbon of the USC Michelson Center for Convergent Bioscience on Nov. 1, 2017.

A book for all

The grantmaking 20MM (20 Million Minds) Foundation and Michelson Institute for Intellectual Property continue this long track record of giving back. “The Intangible Advantage” is the institute’s primary education resource.

“Any person today who does not understand at least the basics of intellectual property—and its value and role in science, business, arts, and the professions—will find him or herself at a distinct disadvantage in the world of tomorrow,” Dr. Michelson wrote.

“The Founding Fathers of America created the world’s first democratized intellectual property system for the common man. [I thought that it was important for the] brightest minds in intellectual property to [collaborate and] democratize this once-inscrutable subject and [produce] the world’s first intellectual property textbook, online course, and video series.

“A book that explains the complex workings of patent, copyright, trademark and trade secret law in popular, non-legalese prose—especially one largely written by a non-lawyer (albeit a recognized expert in the field)—needs careful vetting. For our “peer-reviews,” we relied on the advice and counsel of a number of leading IP academics and practitioners, five of whom stand out most strongly for their contributions.”

Prioritizing patents

Dr. Michelson’s desire to educate the public about intellectual property—and its importance—stems from a deep firsthand understanding of the importance of patents.

“Surgeons began asking me to provide them with a set of tools of their own,” he says in the preface to his book. “I said sure, and for each request, I would ask my machinist to fabricate another set of tools. Finally, the machinist told me that it would be cheaper just to make a hundred sets at once, since the major cost of fabricating the tools was in setting up the jigs on the machine.

“I thought that made perfect sense. After all, the demand for the tools from other surgeons was growing. In addition, I was disgruntled enough with the standard of care in other areas of spinal treatment that I had already invented several other new spinal surgery tools. So I started a little company to sell my tools and devices.

“I quickly realized, of course, that I needed to patent my inventions to protect all the time, money, and effort that I had invested to develop them.

“After all, if you don’t patent your inventions, especially in a competitive industry like medical devices, others will simply copy those inventions with impunity and sell them at a lower cost because they didn’t have to invest anything to develop them in the first place. That’s

Dr. Michelson (left) appears with Michelson 20MM Strategic Initiatives Director Mayra Lombera and 20MM President/Co-founder Phil Kim at a 2017 IP event.



“With IP-protected innovation now the principal driver of corporate value as well as national economic growth, intellectual property has become vitally important to *all* Americans ...”

—DR. GARY MICHELSON



a great way to drive the innovators out of any industry and halt any further technical advances in that field.”

It's an IP world now

On a larger scale, Dr. Michelson sees the growing import of IP in a rapidly evolving business landscape. “Up to now, intellectual property has been taught only in law schools (or the occasional business school seminar),” he wrote in a 2017 op-ed piece on *The Hill*.

“But over the last 50 years, IP has grown from a narrowly specialized legal field into a major force in American social and economic life. With IP-protected innovation now the principal driver of corporate value as well as national economic growth, intellectual property has become vitally important to *all* Americans, not just those in the legal profession. ...

“Intellectual property has become the new watchword for almost any technology—or business-focused career. Indeed, IP’s influence is everywhere.

“While wireless markets are won and lost in corporate ‘patent wars,’ the victors in tomorrow’s driverless car business may be decided by today’s Google trade secret lawsuit against Uber. In the biotech sector, billions of dollars in investments hinge on Supreme Court patent decisions and proposed new IP legislation.

“As for the music industry, it’s still trying to figure out what the \$7 million 2015 copyright infringement verdict against Robin Thicke and Pharrell Williams for borrowing merely the “themes” of soul singer Marvin Gaye’s work means for their creative options.”

Empowering students

The vision for Michelson 20MM began in 2008.

The doctor noticed a story about Santa Ana (California) College, where students who got a B or better average in their first year didn’t come back for the second year was because they couldn’t afford the books. He also read that the community college’s teachers agreed to give \$500 each to help these students buy books and finish their studies. Dr.

Michelson spent \$50,000 to fully fund the project.

“I felt bad about it because I didn’t feel it was nearly enough. It was just a temporary fix for one of 112 community colleges in California,” he told CSQ magazine.

So he started 20MM, with a first initiative to create a library of “super-high quality, open-license, freely downloadable, interactive college textbooks.” That library of free open textbooks now houses a collection of 30 books in use by more than 6 million students.

Michelson 20MM also founded the first philanthropic higher education accelerator focused on social impact investing. Its ultimate goal is to connect institutions, innovators and policymakers solving the most pressing issues in postsecondary and vocational education so that students worldwide have access to an affordable, equitable, and high-quality education.

In March, 20MM announced The Michelson Spark Grants program, which truncates the grant-awarding process by committing to respond to applicants within 15 business days.

This all comports with the mind-set of an innovator. “Inventors are constantly finding out what’s wrong with the world and saying, “I wanna go fix that,”” Dr. Michelson says. 📍

“The Intangible Advantage,” available in several media formats, provides detailed information on all aspects of intellectual property from experts in the field.

DR. GARY MICHELSON

Age: 70

Raised: Philadelphia

Education: Central High School, B.A. Temple University, M.D. Hahnemann Medical College

Occupation: Orthopedic spinal surgeon, medical device inventor, philanthropist

Residence: Los Angeles





The 45 at 70

CLASSIC 7-INCH RECORD
FORMAT, UNVEILED IN 1949 BY
RCA VICTOR, WAS ACTUALLY
INVENTED YEARS EARLIER

BY REID CREAGER

WHEN IT COMES TO ICONIC INVENTIONS IN 20TH-CENTURY POP CULTURE, the 45 RPM record quickly spins into the mind's eye whether we lived its heyday or not.

In YouTube videos, the colorful little discs fall from a spindle changer before playing a vintage hit. Retro and current movies show them being played in jukeboxes back in the day. Reruns feature their prominent presence in the opening credits for the debut of the TV smash "Happy Days" in 1974—the 45's peak sales year.

For those who bought 45s from youth into adulthood, the memories are more personal and lasting: the joy of having your favorite song in a portable format, and for well under a dollar. The occasional picture sleeve that provided a bonus souvenir (some worth hundreds of dollars today). The carrying cases with sheets of numbered stickers inside. Those thin little red or yellow plastic thingies that served as a makeshift adapter—you know, the ones that unintentionally looked a little like round swastikas.

The 45 RPM single reflects a simpler time in technology and the world. The 70th anniversary of its release reveals some detailed and surprising origins.

'Mary had a little lamb'

Let's start with the 45's genesis—the phonograph on which it was played.

Thomas Edison discovered his favorite invention in 1877 while working to improve the telegraph and telephone. He correctly figured that their technology could be modified to record sound.

Edison designed a machine with two needles: one for recording sound and one for playing it back. The first needle would indent the sound vibrations onto a cylinder covered with tin foil; the other one would copy the exact indentations to produce the same sound again.

He spoke the words "Mary had a little lamb" into the machine, was shocked to hear them played back, and recorded phonograph history was under way.

(Edison wasn't just a great inventor but a savvy marketer. He soon imagined such important uses as talking books for the blind, music boxes, and leaving phone messages. In 1878 he opened the Edison Speaking Phonograph Co., which was an immediate success.)

However, the cylinders required for Edison's phonograph were expensive to produce in large volumes and besides, his designs and concepts were

strongly protected by patents. So in 1892, Emile Berliner developed the concept of a flat record. It could inexpensively be duplicated by pressing it from a master disc, and it had music on both sides.

An industry secret

Google the history of the 45, and you'll often read that RCA Victor invented it in 1949 as a response to rival Columbia's introduction of the 33 1/3 RPM long-playing record a year earlier. Wrong.

RCA Victor had secretly developed the 45—and its own phonograph for playing it—some 10 years earlier. (How secret? *Inventors Digest* was unable to find a patent.)

Nonetheless, the competition between the companies responsible for the 33 1/3 and 45 is relevant to this story.

According to phonojack.com, Columbia's chief engineer, Peter Goldmark, invited RCA President David Sarnoff and his engineers to tour Columbia's record laboratories to view the new 33 1/3 RPM disc and record playing system before their release.

Up to this point, the only record format was the 78 RPM shellac record—easily breakable, with very limited frequency response and sound quality. The 33 1/3 featured superior responses and quality; it also had much less hiss and scratching, as well as less weight for lower shipping costs.

(The term "45" is the result of simple math, the difference between the 78 RPM record and the 33.)

Sarnoff publicly nodded to the 33 1/3's substantial technological advancements, while privately his fiercely competitive business instincts raged. Often characterized as a ruthless businessman, he froze out TV inventor Philo Farnsworth in a long court battle that was referenced in the August 2016 *Inventors Digest*.

Steve Kelsay at phonojack.com wrote:

"David Sarnoff and his engineers politely expressed their approval and admiration for the 'new' recording



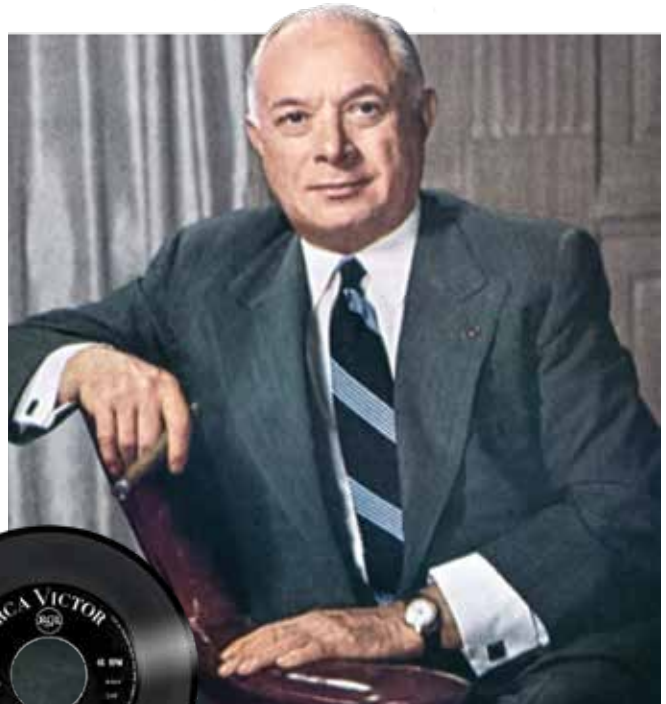


Some claim that Eddy Arnold's 1949 song "Texarkana Baby" was the first 45 RPM single. David Sarnoff ordered the 45 RPM system into production. It included its own phonograph.

medium developed by Columbia, but following the tour and demonstration, David Sarnoff ordered his engineers in marketing and research to bring into production the previously developed RCA Victor 45 RPM system (which had been kept a carefully guarded industrial (sic) secret for nearly 10 years)."

The June 1949 issue of *RCA Review* bears this out, via a paper published by company engineers that read, in part: "About 17 years ago, there began a program aimed at a fundamental improvement in the reproduction of recorded music.

"Unhampered by any previous restrictions, (sic) attempt was made to develop an ideal method of bringing recorded music into the home. Factors of cost and convenience to the customer, playing time, record life, freedom from distortion and numerous



technical considerations were established with the 'ideal' being the objective.

"Some nine years of research and experimentation culminated in a new record playing means which, after eight more years of testing and refinement, finally emerged in a record changer and record to be discussed in this paper."

RCA Victor's 45 RPM record system began production in early 1949, with its first advertising appearing in the April 2 *Billboard* magazine. The first discs and automatic record players began appearing in retail record stores in June.

At Columbia, Goldmark and his team were flummoxed that RCA Victor had seemingly developed this revolutionary record medium in just a few months—unaware that their rivals had invented and developed the 45 RPM record and changer in 1938 or 1939.



THE 'B' SIDE 'A' LIST

It's a good thing that Emile Berliner invented a flat record that could be played on both sides.

Did you know that Bill Haley and His Comets' iconic "Rock Around the Clock" was an afterthought on a 45 released by the group in 1954? The "A" side song was "Thirteen Women (And Only One Man in Town)." Other "B" sides that rose to fame when somebody thought to flip over the 45 and listen to it:

- "Silver Springs," Fleetwood Mac, 1977
- "Ruby Tuesday," Rolling Stones, 1967
- "We Will Rock You," Queen, 1977
- "Unchained Melody," Righteous Brothers, 1965
- "Yellow Ledbetter," Pearl Jam, 1992
- "Strawberry Fields Forever," Beatles, 1967
- "You Can't Always Get What You Want," Rolling Stones, 1969

Pick a date—any date

CBS News says the 45 RPM record was unveiled on Jan. 10, 1949. (False; the player was released in January 1949, with the records themselves unveiled in March.)

Rolling Stone magazine says the 45 was released on March 15, 1949.

The oft-erroneous Wikipedia says it was released on March 31, 1949.

The most reliable date is March 31—confirmed by music industry aficionado Norm Katuna, who quoted from copies of the RCA distributors' *Record Bulletin* and who researched actual bound volumes of *Billboard* issues from the 1940s at the magazine's offices.

Katuna's blog provided promotional fodder from RCA Victor's first advertisement on the 45, which spanned four pages.

The records were said to feature a "distortion-free playing service" and last many times longer due to a "special Shoulder Construction" that keeps playing surfaces from rubbing (against) one another so as to prevent damage to record grooves. The seven-inch size allows more than 150 single records or 18 symphonies to fit in one foot of bookshelf space.

The changer, made only by RCA Victor, was said to be the world's fastest—the "easiest, surest operating changer ever ... and it costs less"—with the ability to play more than 50 minutes without need of attention.

More than one YouTube video proclaims Eddy Arnold's 1949 song "Texarkana Baby" as the world's first 45 RPM single, but that can't be verified. In fact, RCA Victor archives say the company released seven different premiere 45s, including Arthur (Big Boy) Crudup's "That's All Right" that was later a big hit for Elvis Presley.

On May 7, 1949, "You're Adorable" by Perry Como became the first 45 on the *Billboard* charts. The following week, "Riders in the Sky" by Vaughn Monroe became the year's biggest 45 hit.

RCA Victor originally used seven different-colored vinyl 45s to delineate different music categories but discontinued the practice because of the expense.

Reign and decline

With its low cost, portability and small size that made it perfect for jukeboxes, the 45 caught on quickly.

RCA's 1950 annual report said that by the end of 1949, 45s "were being manufactured at the rate of more than 25 million per year while turntables capable of playing 45s were produced by RCA at the rate of more than 1 million annually."

Bill Haley and His Comets "Rock Around the Clock"—which, ironically, opened the introduction to the first "Happy Days" episode in 1974—sold 3

The records were said to feature a "distortion-free playing service" and last many times longer due to a "special Shoulder Construction."

million singles in 1955. Every major artist eventually appeared in the format, from the Beatles to the White Stripes. Some 45s, such as "Honky Tonk Women" by the Rolling Stones, were first released in that smaller format—not pulled from an album per the prevailing industry practice.

The format peaked in '74 with 200 million units sold, according to the *New York Times*. But inevitable shifting preferences and technological advances hastened the 45's downward spin. Album rock grew in popularity, jukeboxes faded from view, and the cassette format soared to prominence.

You can still buy newer 45s, of course. They are now a nostalgia market, buried long ago by newer conveniences ranging from (short-lived) mini-CDs to mp3s.

Still, for many the 45 will live on indefinitely as a comforting reminder of happy days. 🎵



BEATLES TOP 10 45s

The Fab Four's best-performing singles on *Billboard*'s Hot 100 chart:

1. "Hey Jude," 1968
2. "I Want to Hold Your Hand," 1963
3. "She Loves You," 1963
4. "Get Back," 1969
5. "Let it Be," 1970
6. "Come Together/Something," 1969
7. "Hello Goodbye," 1967
8. "A Hard Day's Night," 1964
9. "We Can Work it Out," 1965
10. "Can't Buy Me Love," 1964

LEMELSON-MIT

2019 STUDENT PRIZE

4 GRADUATE STUDENTS, 3 UNDERGRADUATE TEAMS ARE WINNERS

Two cancer-fighting screening tools highlight innovations by college students who are among the winners of the 2019 Lemelson-MIT Student Prize.

The annual prize, supported by The Lemelson Foundation, follows a nationwide search for the most inventive college students who attempt to solve global problems. This year's program awarded a total of \$90,000 in prizes to three undergraduate teams and four individual graduate student inventors. Graduate winners/teams won \$15,000; undergraduates won \$10,000.

Students were selected based on factors that included the overall inventiveness of the work, the invention's potential for commercialization or adoption, and youth mentorship experience. The winners:

"CURE IT!" PRIZE (*tech-based health care inventions*)

Graduate: **Mercy Asiedu** of Duke University invented the Callascope—a high-quality, low-cost, speculum-free device for cervical cancer screening and prevention. Most cervical cancer-related deaths occur in low- and middle-income countries due to the lack of affordable screening technology.

The device can be easily inserted into the vagina, like a tampon. It is fitted with a consumer-grade light source and camera to take images of the cervix from inside the body. The Callascope can be connected to a mobile phone, tablet or computer, and is coupled with an algorithm that uses machine learning to classify cervix images as normal or pre-cancerous.



Undergraduate: **Laura Hinson, Madeline Lee, Sophia Triantis** and **Valerie Zawicki** of Johns Hopkins University invented Ithemba—a reusable, affordable, contamination-free core needle breast biopsy device that is designed to support earlier breast cancer detection in low-resource settings.

Reusable devices currently on the market are expensive and require a 24-hour cleaning process. Ithemba is affordable and can also be sterilized instantly with a bleach wipe. Performing breast biopsies will be significantly less expensive for hospitals and physicians in low-resource settings, and much safer for their patients.

"EAT IT" PRIZE (tech-based food/water and agriculture inventions)



Graduate: **Julie Bliss Mullen** of the University of Massachusetts, Amherst, started a company called Aclarity LLC. It offers a scalable electrochemical water purification technology, marketed initially for residential use, that uses low amounts of electricity to zap contaminants in water through advanced oxidation reactions.

The technology disinfects pathogens, destroys organic contaminants, removes metals, and normalizes pH to produce clean and safe water. It reduces maintenance, uses low energy and purifies water faster and more efficiently than conventional treatment methods.

Undergraduate: **Enid Partika** and **William Tanaka** of the University of California San Diego started the BioEnergy Project. It's a compact and scalable food-waste-to-food-and-fuel system that converts food waste from dining halls and restaurants into nutrient-rich organic fertilizer that can be used to grow more food, as well as electricity that is generated from biogas.

Currently, 40 percent of all food produced is wasted and dumped into landfills. When food decomposes in a landfill it generates methane, which is released into the atmosphere.



©ZACHARY OSBORN

©PENN STATE COLLEGE OF ENGINEERING

"MOVE IT" PRIZE (tech-based transportation and mobility inventions)



Graduate: **Federico Scurti**, a visiting PhD student at Pennsylvania State University, invented an internal monitoring system for High Temperature Superconductors (HTS). It consists of a sensing system to detect local, incipient failures in the HTS wire that generates the magnetic field needed to operate electric motors or Magnetic Levitation (MagLev) trains.

The sensing system is based on optical fibers embedded into superconducting wires that can prevent failure of the superconductor.

Undergraduate: **John Horne** and **Morgen Glessing** of Brigham Young University invented Portal Entryways, a wireless device that opens disabled-accessible doors when a user approaches with the Portal smartphone application.

A small wireless receiver is installed on the door and the user's Portal app uses proximity to tell the door when to open upon approach. In addition to helping people with mobility-related disabilities, the system enables facilities managers to track door usage data in order to maintain accessibility.



©RYAN SANTORE



"USE IT" PRIZE (tech-based consumer device inventions)

Graduate: **Arnav Kapur** of Massachusetts Institute of Technology invented AlterEgo—a headset-like device that is a sensory and auditory feedback system, using neuromuscular signals from the brain's speech system to extract speech.

When we talk to ourselves internally, our brain transmits electrical signals to the vocal cords and internal muscles involved in speech production. With AlterEgo, an artificial intelligence agent is able to make sense of these signals and prepare a response. The user can hear the AI agent's responses through vibrations in the skull and inner ear, making the process entirely internal. The AI agent can also send the information to a computer, to help an individual with a speech disability communicate in real time. 🗣️

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The Next IoT Wave

OUR EXPERT PREDICTS UPCOMING TRENDS IN CONNECTED DEVICE DEVELOPMENT **BY JEREMY LOSAW**

ALTHOUGH it has only been about 10 years since smart home and IoT products exploded into the marketplace, there could be up to 50 billion connected devices in service by the end of next year. That is approximately 6 1/2 devices for everyone on the planet.

The Internet of Things has seemingly penetrated every corner of our lives. Even graffiti artist Banksy used wireless technology to shred his “Girl With Balloon” painting during a Sotheby’s auction last year.

Despite the saturation of IoT devices, there is still plenty of room in the market for improvement and change. Consider these IoT trends that I think will drive connected device development in coming years:

Integrated designs

When IoT devices were first conceived, they were “add-on” products. The Nike+, one of the first connected fitness trackers, clipped to your sneaker. It was clearly an accessory.

As connected technology and the need for it has evolved, we are starting to see products that are designed holistically with IoT embedded in them—such as Digitsole, an IoT-enabled shoe insert capable of advanced fitness monitoring. You would never know the difference between a sneaker fitted with one and one without.

Sensors and actuators will continue to shrink in size, so they will be easier to be embedded in more different types of devices—including irregular products such as clothing.

Wellness

The Fitbit—the first superstar of IoT wellness—merely opened the floodgates. People have always had enthusiasm for fitness and well-being, and connected devices provide hard data to help us make meaningful

changes. Existing devices can help you improve posture, track your fertility, or monitor your workouts.

However, there are still opportunities in the market. Sleep tech is an emerging trend. The Somnox sleep pacing pillow and the Kryo heating and cooling mattress topper are just two connected sleep devices that have scratched the surface of the capability of IoT to help us rest and recover.

There is also an emerging promise that IoT devices can help persons living with disabilities. The emergence of voice control and advanced laser vision technology opens the door to bring sense and control back to people with disabilities.

Industrial applications

IoT has been dubbed the fourth Industrial Revolution, and with good reason. Data from manufacturing and other industries are helping to optimize the time and energy it takes to make, transport and warehouse goods. Although devices in this category do not get as much hype as the latest smart home gadgets, they can be far more impactful to the global community.

Smart agriculture devices monitor food crops and can tell farmers when to water fields, as well as indicating which areas are having pest issues. Sensored assembly lines allow manufacturers to assemble faster and with fewer mistakes. Inventory trackers are monitoring shipments and making sure that condition-sensitive deliveries are not exposed to adverse conditions.

The possibilities are endless. There is a huge need for custom hardware and IoT implementations to take advantage of connected technology for industry.

Machine learning

Collecting masses of data is futile if it is not analyzed. Machine learning leverages the massive computing power of the cloud to find trends in IoT data and help





There is a huge need for custom hardware and IoT implementations to take advantage of connected technology for industry.

create algorithms that are fed back to our devices to make them smarter.

For example, the Nest thermostat collects data that are then analyzed to find trends and adapt its heating and cooling cycles to match your habits. Machine learning software and techniques are becoming more mature and easier to deploy; these will continue to be an integral part of IoT products.

An interesting side effect of the boom in machine learning is an emerging trend toward the commodification of hardware. Some companies are choosing to spend less development time and dollars developing custom circuitry, instead using off-the-shelf hardware. This allows them to devote more resources to develop learning algorithms for their devices to make them smarter and more useful.

Edge computing

This process leverages the processing power on the device to perform calculations, instead of sending it to the cloud to be analyzed. The need for fast processing speed is one driver of edge computing technology, and an obvious application is driverless/driver-assisted vehicles.

In this environment, vehicles are collecting lots of data and moving at a rapid rate of ground speed. The

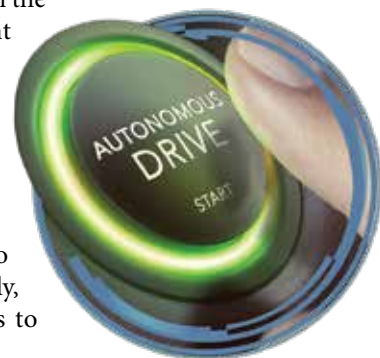
need to make split-second decisions to modulate their controls means they simply do not have time for data to be pushed to and from the cloud before taking action, such as applying brake pressure to avoid a collision.

The emergence of long-range wireless networks such as is also driving the need for edge computing. LoRaWAN offers a transmission range of miles but can only transmit small packets of data.

In these types of devices, it makes more sense to process data and make decisions on the device and then only transmit the result of the data to the cloud. Fortunately, processing power continues to drop in cost, allowing very capable edge computing to be deployed economically.

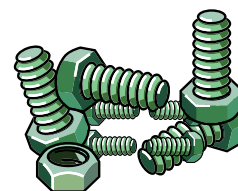
Arnold Schwarzenegger's character in the 1991 movie "Terminator 2: Judgment Day" originally predicted that smart devices would take over the world. (The Terminator was a tad optimistic on the day when computers would take over: Skynet was supposed to be fully autonomous on Aug. 29, 1997.)

Smart devices are being deployed to help us live better lives—and fortunately, there is plenty of room for inventors to advance the technology. 🤖



Don't Forget the Nuts and Bolts

DESCRIBING AN INVENTION'S PARTS AND PIECES IS THE KEY TO A VALUABLE PATENT **BY GENE QUINN**



FROM a conceptual standpoint, it would seem logical to assume that writing text to describe an invention ought to be easy for the inventor of that invention.

Unfortunately, it isn't that simple. Although inventors are very good at inventing, they tend to be less good at many of the adjacent and necessary tasks along the road from invention to market success.

The inventor undoubtedly knows the invention better than anyone else, but it can be enormously difficult for him or her to describe it.

The inventor of a new and useful invention is always in the best position to describe it. The problem lies with the reality that most inventors don't understand what needs to be described in order to satisfy U.S. patentability requirements.

And when inventors avoid professional assistance, they often wind up focusing their entire description of their inventions on how their new device or gadget will be used—at the expense of describing the parts and pieces that make up the invention. This is an enormous mistake, one from which there is often no recovery.

For example, most inventors can write volumes about why they came up with the invention, but why the invention was made isn't particularly relevant to patentability.

Similarly, inventors are very good at describing how their inventions can be used and why their invention is superior from a usability standpoint to anything similar and available in the marketplace. The trouble is that describing how an invention can be used, while a prerequisite, will not distinguish a tangible invention from the prior art.

What is relevant to patentability—and almost universally ignored by do-it-yourself inventors—is how the invention is different compared to the prior art on a structural, mechanical level.

The POSITA

Before moving forward, let's recall (or perhaps learn for the first time) the goal when describing an invention in a patent application. It is to describe the invention such that someone of skill in the technological area of the invention, or a "person of ordinary skill in the art (POSITA), would be able to both make and use the invention having read only the patent application.

That is why it is best to proceed as if a patent application requires instruction manual-level of disclosure. This "make and use" requirement is called the enablement requirement.

Without getting too much into the legal weeds, it is critically important to point out that the enablement requirement specifically requires the patent application to teach how to both make and use the invention.

Thus, when the majority of the focus is placed only on how to use the invention, the patent application filed is almost certainly going to be defective. Sadly, a defective patent application that does not satisfy the enablement requirement at the time it is filed does not provide any value.

Therefore, one should place appropriate focus on how to make the invention—which requires description of each of the pieces and parts of the invention, as well as detailed instructions for how everything is assembled.

Structure, not function

Inventors should not despair. Disclosing and then describing the pieces and parts of the invention is not as impossible a task as it might initially seem.

High-quality patent drawings are ordinarily quite inexpensive (about \$30 to \$50 per figure). Whatever one of skill in the art would understand by viewing the drawings will be disclosed. Of course, you should also include descriptions of each figure in the application.

Why is this so important? Because for an invention directed to a tangible invention (referred to in patent law as either a machine, device or apparatus) to be distinguished from the prior art, it must be described in terms of structure rather than in terms of function.

This is true because an invention description that only focuses on how the machine or apparatus is intended to be used does not differentiate from the prior art if the prior art teaches all the structural limitations of the described tangible invention.

If you focus your description only on use, at best you can obtain a patent on a new method for using a known product. The problem with those types of claims, however, is that in the hands of an individual, new and nonobvious claims to a new method of a known product became difficult, if not impossible, to enforce.

The thought process goes like this: Whom will you sue for infringement of your new method patent? In almost all cases, the infringer will be the user—not the manufacturer, distributor or seller.

But if you define your invention from a structural standpoint instead of a use-only standpoint, the infringer would be the manufacturer, distributor and seller.

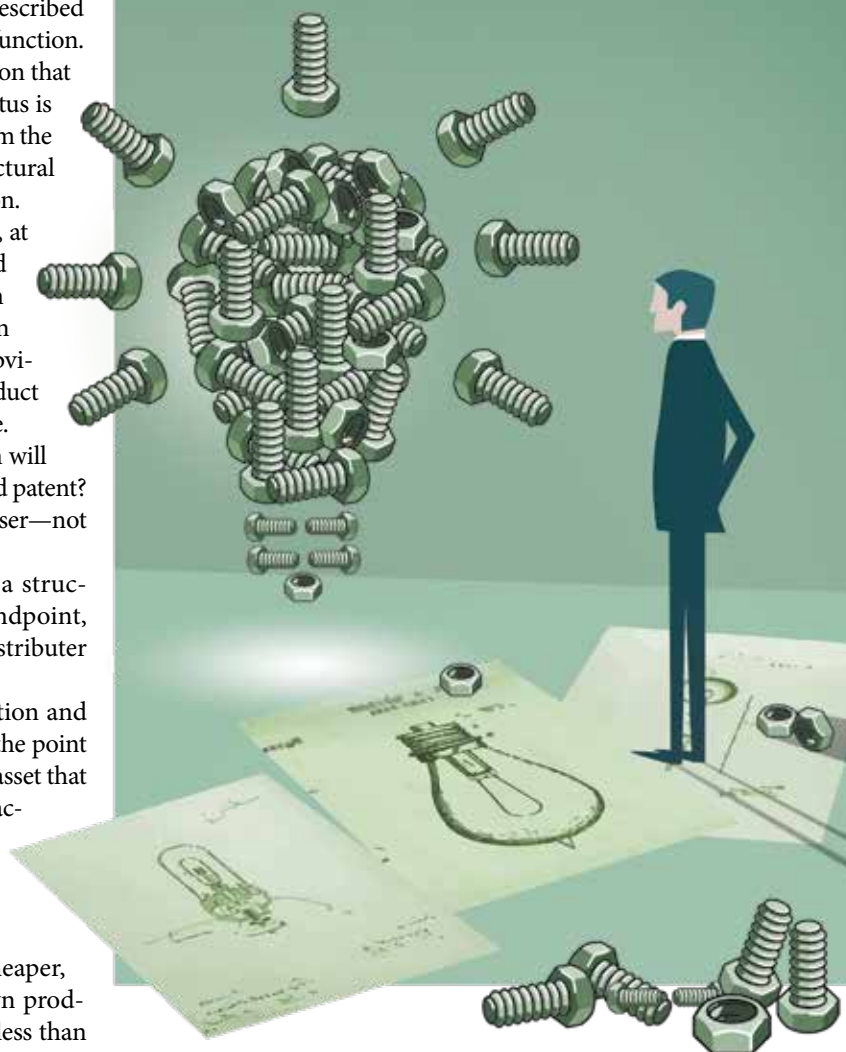
Being able to control the tangible invention and prevent it from reaching the marketplace is the point of a patent. That way you have a meaningful asset that can be licensed to those who want to manufacture, distribute and sell.

Of course, method patents are not useless, and in fact can be quite valuable in the right hands.

For example, if you were to invent a cheaper, faster, more efficient way to create a known product, you could sell that known product for less than what others could who are not using your method. These types of commercial methods can become quite valuable and must be distinguished from the typical method of use that an inventor describes.

The moral of the story: When describing an invention, you must describe how the invention will be used. But to obtain the most valuable patent, you need to describe the structural uniqueness of your invention. 📌

What is relevant to patentability is how the invention is different compared to the prior art on a structural, mechanical level.



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.





Alice, 5 Years Later

DESPITE NEW GUIDANCE, PATENT ELIGIBILITY IS STILL UNCLEAR IN WAKE OF LANDMARK RULING **BY GENE QUINN**

ON JUNE 19 it will be five years since the United States Supreme Court issued a decision in *Alice Corp. v. CLS Bank*, which significantly changed the way courts and patent examiners evaluated patent eligibility of computer-implemented innovation in the United States.

Although SCOTUS ostensibly extended the patent eligibility analysis applied in the life sciences context that had previously been adopted in 2012's *Mayo Collaborative v. Prometheus Labs*, even a cursory review of allowance rates from the United States Patent and Trademark Office and invalidity rates in federal courts shows that *Alice* changed the prevailing analysis in profound ways.

Waning hope

Almost immediately after *Alice*, patent examiners started to issue new subject-matter eligibility rejections for computer-implemented innovations using the abstract idea exception to the statutory categories of patent eligibility.

"The ubiquity of subject-matter eligibility rejections in office actions exploded, leading many to wonder whether software-implemented inventions remained patentable at all," said Kate Gaudry and

Samuel Hayim, who have done a series of articles on IPWatchdog detailing their statistical analysis.

"For example, the number of allowances issued from business-method art units dropped from 24 percent in the months before *Alice* was decided to about 3 percent in months after."

For months, there has been growing hope that a legislative fix led by a few dedicated members of Congress would provide a solution. But that hope is waning in favor of the dawning, uncomfortable reality that big tech is dominating the discussions.

Reason to cry

Although many will not cry a river over innovations that have been routed to the business method art units suffering the indignation of insurmountable *Alice* rejections, in the aftermath of 2016's *Electric Power Group, LLC v. Alstom, S.A.*, the USPTO started issuing patent eligibility rejections in the Artificial Intelligence (AI) art units.

All because the United States Court of Appeals for the Federal Circuit explained in *Electric Power Group* that concepts of collecting and analyzing information fall within the "realm of abstract ideas" because information is intangible.

Someone needs to explain to the federal circuit that the very benefit of innovation we classify as AI is in the

**AI innovations are not $A + B = C$.
The benefit of the innovation lies
in the abstraction.**



fact that it *is* abstract. So, finding an AI-related innovation patent ineligible because it is abstract is asinine.

Of course it's abstract! That is the entire point of the invention. Artificial Intelligence is by definition creating or exhibiting the appearance of human cognition. AI innovations are not $A + B = C$. The benefit of the innovation lies in the abstraction.

The trials and tribulations of innovators in the AI space is particularly significant because the federal circuit relied on *Alice* in *Electric Power Group* to invalidate the claims at issue. This means the Supreme Court is responsible for the exportation of AI research and development and angel and venture funding to China and Europe.

Just sideways, backwards

One of the stranger scenarios present in the financial sector since *Alice* is that payment gateways—services that securely send credit card information from a website to a credit card payment network and then back—are no longer patent eligible in America. They are, however, patent eligible overseas.

Even stranger: The functioning of a payment gateway cannot achieve a utility patent in the United States, but it can obtain design patent protection for the look and feel.

Refusing to protect the intricate technical implementations of payment gateways but protecting their aesthetic because they look cool or interesting seems backwards. The United States is willing to protect the way something looks rather than the significant engineering achievements behind a useful non-obvious financial interface?

Then again, on the life sciences side of the aisle, one of the most revolutionary medical discoveries of recent vintage—an invention that reduced the risk of mother and unborn child to absolute zero by obviating the need for amniocentesis—was found patent ineligible, although a method for freezing liver cells was declared patent eligible.

In many regards with respect to patent eligibility, since *Alice* the U.S. has been like a crab that can't travel any way but sideways or backwards.

Chances for change

As the fifth anniversary of the *Alice* decision approaches, great uncertainty remains with respect to what is patent eligible in America. Although the USPTO, under the leadership of Director Andrei Iancu, has released new guidance last year and this year, significant questions exist.

Although patent eligibility rejections have lowered—for example, with respect to technologies such as AI-related innovation—if the federal circuit does not support a new approach that strictly interprets Supreme Court precedent, more chaos will ensue. ☐

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Sad Song

MUSIC INDUSTRY GROUPS BATTLE SONGWRITERS,
SMALL PUBLISHERS OVER LICENSING **BY STEVE BRACHMANN**

A **N UP**COMING deadline stipulated in the recently passed Music Modernization Act has intensified the spotlight on a licensing fight within the industry.

On October 11, the Orrin G. Hatch-Bob Goodlatte Music Modernization Act was enacted into law after passing the U.S. Senate and House of Representatives. The bill was drafted in order to modernize U.S. copyright law as it relates to the licensing of copyright-protected music for use in digital streaming services such as Spotify or Apple Music.

Such digital service providers (DSPs) may obtain a new kind of license created by the law, known as a blanket license, which covers the distribution of all musical works available for compulsory licensing. DSPs may then make these works available to consumers through covered activities—such as delivering digital phonorecords of musical works available in the form of a permanent download, a limited download or as an interactive stream.

In short, the blanket license under the MMA allows Spotify and others to offer streaming music services without having to negotiate licenses with copyright-owning entities, including recording studios and songwriters.

Instead, these streaming services would obtain a blanket license from the Mechanical Licensing Collective (MLC), another new feature of the MMA. The MLC is a nonprofit entity responsible for administering blanket licenses to DSPs, collecting and distributing royalties, enabling copyright owners to claim ownership of musical works and administering a process by which royalties for works with unidentified owners are equitably distributed to known copyright owners.

Vying for the MLC

The statutory language of the MMA directs the Register of Copyrights to designate the membership of the MLC within 270 days of enactment of the law. Given the date on which the MMA was enacted, this

would indicate that July 8 is the deadline for Register of Copyrights Karyn Temple to designate the MLC that would start administering blanket licenses at the beginning of 2021.

Two groups have proposed their own membership of the MLC to the copyright office: a coalition of major publishers from the music industry, including the National Music Publishers Association (NMPA), Songwriters of North America (SONA) and Nashville Songwriters Association International (NSAI); and the American Music Licensing Collective (AMLC), a collection of songwriters, musicians, tech developers and executives from smaller rights organizations and publishers within the music industry.

The period for submitting written comments to the copyright office passed in late April, but the debate on which group should make up the MLC continues to be heated.

On April 22, the deadline for submitting comments to the copyright office, SONA sent a letter to Register Temple in which it pushed back against claims that its group would misappropriate unclaimed royalties. SONA called such claims “outlandish” and designed to “spread fear” in an attempt “to scare less-informed songwriters into entrusting the job of building the MLC to a group of licensing companies whose functions could be made redundant and outdated once the MLC is up and running.”

Shifting the burden?

Jeff Price, a board member with the AMLC, told IPWatchdog that the MMA’s passage essentially flips the licensing burden from DSPs to songwriters.

Before blanket licenses, music services would have to license the use of a song with the recording company and the owner of the copyright covering the music and lyrics. Under the MMA, however, DSPs simply have to negotiate a blanket license with the MLC covering the use of any music composition.



American Music Licensing Collective board member Jeff Price said the Music Modernization Act's passage essentially flips the licensing burden from digital service providers to songwriters.



"Unlike before, where the DSPs would have to find you and pay you, now you have to know about the MLC regardless of where you are on the planet," Price said.

Although the MLC is responsible for identifying self-publishing songwriters or publishing administrators, Price found it easy to contemplate situations in which the MLC could actually make life difficult for songwriters trying to earn royalties.

"If you do not register with the MLC, you are not eligible to get paid the money you have earned," he said. "If you do register but if a technical or data error occurs at the MLC and they don't figure out that the money is yours, you also will not get paid."

Money collected by the MLC from blanket licenses and not delivered to a songwriter because that songwriter hasn't been identified is held by the MLC; Price said that such accrued but undistributed funds are expected to reach \$4 billion to \$5 billion within the next five to seven years.

Despite the NMPA's position as a major music publishers association, Price argued that the organization was a better lobbying firm than a technology developer. By contrast, the AMLC has board members with the technology background required to accomplish the MLC's various responsibilities, including the creation of a musical works database that will help music creators collect royalties for their music.

"It's wrong to expect the NMPA to create and develop technology," Price said. "It's just not what they do."

Price cited the failure of the Global Repertoire Database, a licensing database that had the backing of multiple worldwide collective management organizations (CMOs), as an example of the poor ability of major music organizations such as the NMPA to develop effective technical platforms like those required by the MMA.

By contrast, AMLC's Price created TuneCore, a digital distribution platform for rights holders that was acquired in July 2017 by Sony—a major music publisher that would have an executive on the MLC's board if the NMPA industry coalition is accepted.

Ulterior motives?

Beyond the simple assertion that the major industry group is poorly suited for the MLC's objectives, Price voiced great concern over the potential of ulterior motives based on a particular aspect of the MMA's language.

Paragraph 11(e) of Title I of the MMA is named "Preemption of State Property Laws," and it reads:

"The holding and distribution of funds by the mechanical licensing collective in accordance with this subsection shall supersede and preempt any State law (including common law) concerning escheatment or abandoned property, or any analogous provision, that might otherwise apply."

"That one sentence now makes it legal for the first time in U.S. history to take someone else's mechanical royalty and give it away to others," Price said.



After three years, he said that such accrued but undistributed royalties would be liquidated and then given on a percentage basis to music industry entities based on market share. Price said that the major music organizations making up the industry coalition, which played a major role in writing the language of the MMA, haven't addressed that apparent conflict of interest.

"The music publishers wrote that language, and it serves no other purpose," Price added. "Why is it there?"

Complaints on AMLC

IPWatchdog reached out to the NMPA, SONA and NSAI for comment and only the NMPA responded, forwarding their public comments to the copyright office. The industry coalition has been harsh in its criticism of the AMLC's proposal.

In its comments, posted April 23, the coalition argued that the AMLC doesn't satisfy the MLC criteria of endorsement by copyright owners representing "the greatest percentage of the licensor market" and that it has "misrepresented facts to the Register about endorsement."

The comments also argue that the AMLC includes numerous members who are statutorily ineligible to make up the MLC's membership, that the AMLC's governance selection procedure is neither explained nor transparent, and that the AMLC has its own serious and undisclosed conflicts.

Need for cooperation

"If all goes as intended, the MLC should be very helpful in regard to helping songwriters collect royalties from streaming services," said Erin M. Jacobson, an attorney with extensive experience in advising musicians and songwriters on intellectual property rights matters.

The intent behind the MLC's creation is to streamline the mechanical licensing process and, assuming the organization's structure is built as envisioned, it can be very effective at that job. The MLC's first hurdle will likely be the creation of the musical works database, which Jacobson said would be a complicated and expensive project, the funding for which remains to be secured.

"Both groups applying to run the MLC are experienced with the rights involved, the collection of royalties, and technology," Jacobson said.

The biggest point of contention between the two seemed to be the handling of "black box" money, those accrued but undistributed royalties discussed above by Price. The industry coalition addressed this concern in its comments to the copyright office by noting that the MMA, while it requires the distribution to happen proportionally by market share, mandates that 50 percent of the distributed funds would go to songwriters. Every copyright owner and associated songwriter would thus receive funds, including AMLC board members who are copyright owners or songwriters.

Outside of this heated debate, other factors—such as an appeal of the Copyright Royalty Board's recent mechanical licensing rate-setting by Spotify and Amazon—suggest that it may be difficult for the MLC to work as intended.

"The music industry felt incredibly betrayed by the streaming services because they put forward a face of cooperation throughout the MMA process, knowing they would subsequently stab the music industry in the back with the CRB appeals," Jacobson said. ☒

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



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Biotechnology

Pennsylvania Convention Center
Philadelphia

No phone contact for show
convention.bio.org

June 4-6

Licensing International Expo

Mandalay Bay Convention Center
Las Vegas
888-644-2022; licensingexpo.com

June 9-13

Cisco Live

Technology

San Diego Convention Center
866-405-2508; ciscolive.com

June 11-13

E3 (Electronic Entertainment Expo)

Computer and video games

Los Angeles Convention Center
No phone contact for show
e3expo.com

June 11-13

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IoT Corner

With the number of connected devices soaring into the billions, powering these products is an important concern for long-term sustainability. MATRIX Industries has developed a new type of thermoelectric energy generation (TEG) device that can power IoT devices with body heat.

TEG devices have been around for many years but have not generated enough output from body heat to be viable for wearables. The heart of MATRIX's new technology is a material called **Gemini** that has billions of tiny holes to control the flow of heat and electricity to maximize efficiency. The new material is 30 percent more efficient than standard TEG materials and capable of producing enough energy from body heat to power small IoT devices such as smartwatches and Bluetooth beacons. MATRIX has launched a smartwatch called the PowerWatch that is the first product to incorporate the tech. —Jeremy Losaw



Wunderkinds

7-year-old **Katrina Smith** got tired of watching her Kindle slide down the dining room table bowl that propped it up. She taped together three cardboard toilet paper rolls and came up with something that would hold up her Kindle so she could read it. Stepbrother Chris Bocci made the creation his grad school project and six years later, Katrina's refined invention is the iCaddy, which hit the market in

January. The iCaddy is a mobile device multi-tool that serves as a stand and charging station, with ear buds and a hidden storage compartment. It's available on Amazon or at shopicaddy.com.



What IS that?

When it comes to making room for your favorite cold brew, this invention caps them all. **bottleLoft** is billed as the first magnetic bottle holder for your refrigerator. Each plastic rail strip, affixed with high-bond tape, includes three custom-sized neodymium magnets that are grade N52, the strongest available.

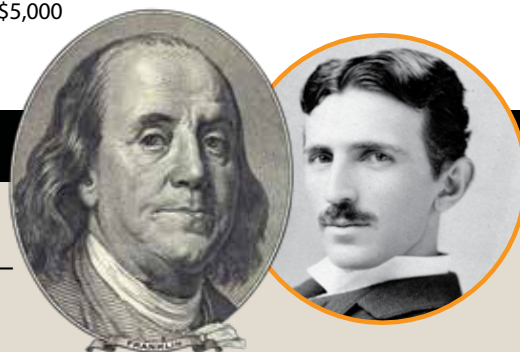
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The approximate cost of a simple, **do-it-yourself patent application**, according to upcounsel.com. Taking the strongly recommended route—using a patent attorney—can cost between \$5,000 and \$10,000-plus.

WHAT DO YOU KNOW?

- 1 **True or false:** For 90 years, all patent applications were accompanied by working scale models.
- 2 Which late musician had a design patent for a portable keyboard?
 A) Prince B) Michael Jackson
 C) Ray Manzarek D) Aretha Franklin
- 3 **True or false:** The NFL trademarked the term "The Big Game" in connection with the Super Bowl.

- 4 Who had more patents—Nikola Tesla, or Ben Franklin?



- 5 The credit card was introduced by Diners Club in what year?
 A) 1940 B) 1950
 C) 1960 D) 1965

ANSWERS: 1. True. From 1790 to 1880, the U.S. government required every patent application to be accompanied by such models, no larger than 12 inches on each side. There were about 200,000 of them before they became too difficult to store. 2. A. The custom keytar, a variant of the keyboard-guitar hybrid that resembles a scimitar, was called the Purpleaxe. The patent expired in 2008. 3. False. The league's silly extremes with regard to protecting its championship game mark rights have not reached that level—yet. 4. Tesla is credited with about 300 patents. Franklin never had or sought one. 5. B.

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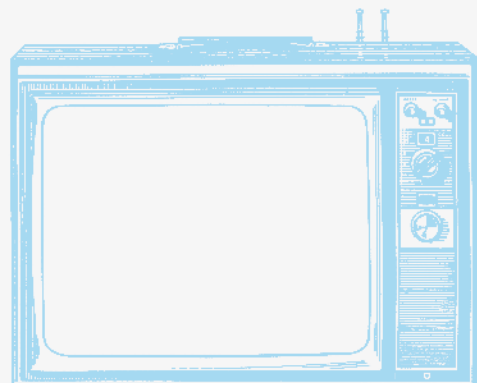
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