

Inventors

JANUARY 2019 Volume 35 Issue 1

DIGEST

NEW YEAR OF OPPORTUNITY

2019 CALENDAR OF U.S. TRADE SHOWS,
MAKER FAIRS AND INVENTOR MEETINGS

A Pro's Tips
on Researching
MAKING SURE YOUR
IDEA IS UNIQUE

AI Looming Large
in Inventing's Future
HOW HUMANS MAY
HAVE TO ADAPT

Marketing With
Instagram Stories
CONNECTING VIA
PHOTOS AND VIDEOS



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A Great Gift Each New Year—Hope

With the calendar turned to 2019, I'm thinking about a 2020 vision I read recently that had a hopeful focus.

It was written by Nikhil Jaisinghani. He's the cofounder of Mera Gao Power, which builds and operates village-based solar micro grids to provide electricity to off-grid households in Uttar Pradesh, India.

Writing for the World Economic Forum in 2014 about tech predictions for 2020, Jaisinghani said: "In the villages I've worked in, nobody has seen an iPhone or can download an app. However, there is tremendous room for entrepreneurs to adapt innovations intended for the wealthy to serve the world's poor.

"Solar panels and LED lights, designed for sale in rich nations, are stimulating growth in commercial off-grid electrification in India and Africa. Mobile telecommunication is being used to facilitate financial inclusion in developing countries across the world. Once-expensive medical procedures can be done amazingly cheaply.

"Even the financial sector is innovating in order to reach the world's poor ... better financing opportunities are opening up for social entrepreneurs who build businesses to serve the poor profitably.

"I see a slight but significant shift in innovation, that instead of producing fancier phones, we will create more fulfilling lives for people who have been mostly ignored to date."

Although *Inventors Digest* is mostly written for and read by Americans, we have subscribers in other countries and a strong appreciation for innovation on the world stage. Last April's issue (cover headline "A World of Hope") touched on some inventions that benefit poor people in developing nations.

Jaisinghani's prediction to the contrary, the demand for and making of fancier phones shows no signs of abating. But we'll keep striving to publicize inventions that benefit the oppressed and ignored.

We're also striving to give you more diverse content. The latest along those lines is our new regular department, "Everybody's Talking," which publishes your comments and questions about past stories and promotes a dialogue for and among readers. It also includes an off-beat story that has people talking in the inventor and IP community.

Our 2019 trade show calendar, an important resource for those looking to make connections in their respective invention disciplines, has expanded by more than 25 percent this year in order to give you more options to get up and go. We relish the world of opportunity for you to innovate for yourselves—and for others.

—Reid
(reid.creager@inventorsdigest.com)

American innovation needs to hit the gym



Weakened patent protections have reduced the value of American inventions. To bolster the strength of US intellectual property, support the STRONGER Patents Act—legislation designed to restore strong Constitutional patent rights, limit patent lawsuits, and end the diversion of USPTO fees.

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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):

"Athletes and Trademarks"
(May 2018):

Great research and selection. Shows the business side of being an amazing athlete.

—ANDREI MINCOV,
TRADEMARK FACTORY

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

An inventor shouldn't hope to get anywhere without the right connections. We, very unfortunately, live in a world where someone without the right connections stands a by far better chance to hit the jackpot in the lottery than ever promoting anything intelligent, useful and needed.

And did you notice that it looks like the first casualty of the internet seems to be ... communication? Try to make contact with somebody important and ask something on Facebook or LinkedIn or some forum. Or try to email to the new product department of some company. Nobody answers, nobody cares, nobody gets it. It's a nightmare.

So I keep playing the lottery because I'm good at math, and I know which way I stand a better chance. —DAN MIMIS



*"Prototyping Tools,
Materials and Processes"*
(September 2017):

I appreciate what you said about PVC being able to be used for structuring and prototyping. I think that PVC foam is a great alternative to plastic and other building materials. My friend is big into home improvement projects, so I'll suggest the versatility of PVC foam to help him in his endeavors. —SAM LI

WITH COPYRIGHTS, THERE'S NO ACCOUNTING FOR TASTE



Copyrights have been granted for works with a definite look or sound. So why not taste?

Such was the recent argument by Dutch herbed cream cheese spread maker Heksenkaas. It got the attention of IP observers (and some of the general public) by claiming its low-cost competitor's cheese, Witte Wievenkaas, tasted exactly like Heksenkaas and thereby infringed on its copyright.

Specifically, a copyright provides its owner with an "exclusive legal right to reproduce, publish, sell, or distribute the matter and form of something." So ... does taste fall under the somewhat vague umbrella of "matter and form"?

No, the European Court of Justice said:

"The taste of a food product cannot... be pinned down with precision and objectivity." Unlike, for example, a literary, pictorial, cinematographic or musical work, which is a precise and objective form of expression, the taste of a food product will be identified essentially on the basis of taste sensations and experiences, which are subjective and variable[.]"

As is often is the case, pros or cons of the ruling can be dependent on one's vantage point. The news service Reuters unobjectively opened its story on the case by writing that "Europe's top court dealt the food industry a blow ..."

True, the ruling was a blow to other food companies that may have planned to copyright their product's taste. But it also was good news for competitors and innovators in the food manufacturing sector.

Not surprisingly, the maker of Heksenkaas was cheesed off by the ruling, calling it "a pity and incorrect that the creative expression in food and perfumes do not have copyright protection."

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BRIGHT IDEAS

Nebula Capsule II

ANDROID TV™ POCKET CINEMA

seenebula.com

Billed as the first Android TV pocket cinema device, the Nebula Capsule II upgrades the original with improved functionality.

It uses a digital light processor to project a 720p HD picture onto 100 inches of screen, tent, wall or most light-colored surfaces. Capsule II's internal speaker is also 60 percent more powerful, and the driver enclosure has been expanded by 50 percent. Capsule II comes with its own gamepad.

It has a projected retail price of \$599, with shipping expected in May for crowdfunding Rewards backers.



PLIQO

ULTRA-COMPACT CARRY-ON BAG

pliqobag.com

PLIQO allows you to fold your suit down to the size of a laptop bag, using a unique arrangement of compression straps, a folding garment hanger and magnets to purportedly leave minimal creasing.

When fully open, the PLIQO bag's usable area measures 50 by 26 inches, big enough for even the largest formal wear items. When normally packed, the bag measures 16 by 12 inches. It is classified as a laptop bag or handbag by many major airlines, so it can be carried into cabins in addition to a piece of conventional carry-on luggage.

PLIQO retails for \$215 and ships in 3-5 days.

Workhorse Saddle Chair

SEATING TO
IMPROVE POSTURE
workhorsechair.com

Designed by a chiropractor who has spent much of his life working around horses, the Workhorse Saddle Chair simulates better posture as when riding a horse.

The saddle-shaped chair claims to maintain the ideal spinal position, with legs sloping down at about a 45-degree angle instead of a regular chair that forces the body to be at 90 degrees between the back and thighs. This can reduce neck, shoulder and back pain, headaches and arthritis while improving posture and blood flow.

The chair, which will retail for \$395, will ship to crowdfunding Rewards backers in March.



“Whatever we invent, from the jet engine to the internet, we find that someone else carts it off and makes a killing from it elsewhere.” —BEN JOHNSON



Gotek

SMART FRIDGE STERILIZER
indiegogo.com

Gotek is meant to freshen and deodorize the inner space of the refrigerator and extend the lifespan of perishable foods. It is designed to kill 96.26 percent of pathogenic bacteria that flourish in cold temperatures, including salmonella, listeria and *Staphylococcus aureus*.

Press a button to choose between Daily Mode and Deep Mode. Gotek is about the size of a can of pop, with a 1.3mm thick aluminum shell.

The sterilizer is powered by a 2000mAh battery that can last 50-90 days, depending on the mode you use and capacity of your fridge. It can be charged with a micro-USB port. It is not to be used in freezers. Gotek retails for \$89, with shipping within two weeks.

Evolution of the Loudspeaker

WHO INVENTED IT? THERE'S A CACOPHONY OF DISAGREEMENT **BY REID CREAGER**

AS LOUDSPEAKERS GO, this was unheard of: 18-karat gold-plated monsters presumably shaped like a golden ear, weighing 220 lbs. and costing \$4.7 million. And that was when they were introduced almost seven years ago.

The 1-of-1 Hart Audio D&W Aural Pleasure loudspeakers still rate as the most expensive in the world. We haven't been able to uncover any evidence that there has been a buyer—perhaps in part because, as *cnet.com* wrote, they look like “a cross between a jelly bean and something an elephant left behind.”

Bright Ideas, not. But these body-rattling behemoths are a testament to audiophiles' lust for sonic perfection, a pursuit that dates to the first electric loudspeakers some 150 years ago. David Hart's quest would doubtless impress the loudspeaker's original inventor—though that distinction is as fuzzy as radio static.

Pick your inventor

Did Johann Philipp Reis invent the loudspeaker? Isn't there a case for Alexander Graham Bell? Oliver Lodge? Peter L. Jensen and Edwin S. Pridham? Werner von Siemens? Edward Kellogg and Chester Rice?

Yes and yes and yes and yes and yes and yes, depending on which source you believe.

According to *edubilla.com*, Reis, a German scientist and inventor, installed an electric loudspeaker in his telephone in 1861 that was capable of reproducing clear tones but muffled speech. Bell patented his first electric loudspeaker, which transmitted intelligible speech, as part of his telephone in 1876; *Edubilla* and many others credit him as the inventor of the loudspeaker. (But remember, Bell is erroneously given widespread credit for inventing the telephone,

when in fact he was merely the first to patent his design for it. He would have loved our current first-to-file patent system.)

The first speaker to be driven by a moving coil—referred to as the “dynamic” speaker—was invented by Lodge, a British physicist, in 1898. He called his cone invention “the bellowing telephone.” Yet few, if any, refer to him as the inventor of the loudspeaker.

Jensen and Pridham, who cofounded the Commercial Wireless and Development Co. in 1911, cited Lodge's improvement in their loudspeaker patent application that was granted in 1923. *Guideservice Danmark* claims that Jensen “invented the first loudspeaker, the first multiple speaker system and produced the speakers that were used in the production of the most popular amplifiers from 1946 up until the 1960's.”

Still others report that Von Siemens, a German inventor and industrialist, gets credit as the inventor of the loudspeaker via his patent for it in 1877. *Targetstudy.com* and others note that von Siemens was the first to describe the moving-coil transducer that is the backbone of the loudspeaker.

In 1924, General Electric researchers Kellogg and Rice patented the electrodynamic speaker that is still in use today. It included modern touches such as a rubber (butyl) surround around the edge of the paper cone.

Bye, gramophone

The invention by Kellogg and Rice was licensed to RCA, which included it in its Radiola line. It had significantly less audio distortion than its predecessors, triggering a new era of sound clarity and refinement.

The loudspeaker wasn't just a consumer invention. In 1937, Metro-Goldwyn-Mayer introduced the Shearer Horn, the first two-way loudspeaker



The price of the 1-of-1 Hart Audio D&W Aural Pleasure loudspeakers was \$4.7 million.

system that was made for use in the movie industry. Public-address messages at the 1939 New York World's Fair were delivered through a huge two-way speaker system mounted on top of a tower.

Soon the old Victrola-style gramophone was on its way out.

In the late 1940s, Navy engineer Arthur Janszen improved on existing cone speaker technology to invent the electrostatic speaker. He added a tweeter element in 1952 to complement the improving bass technology. In the mid-Fifties, audio designer Peter Walker further refined the audio experience via his QUAD electrostatic speaker.

Over the next half century and beyond, further refinements included new cone materials, improved permanent magnet materials, and a series of enhancements and new features inspired by computer-aided design.

Today's world is an audio feast of booming yet crisp indoor and outdoor speakers, including sophisticated home theater systems with dynamic surround sound that all but puts you right at the source. So what's the next step in this evolution?

As much as we may poke fun at the outrageous Hart speakers that began this story, experts say the push is for speakers the size of some of the large instruments

INVENTOR ARCHIVES: JANUARY

January 18, 1933: This month we go from sound-amplifying innovation—the loudspeaker—to noise-reduction technology invented by **Ray Dolby**, who was born on this date.

Dolby began working on the first videotape recording system at Ampex Corp. while a teenager. He founded Dolby Laboratories in 1965 in London before moving the company to San Francisco.

The company's signature achievement was a noise-reduction technique that all but eliminated the audible hiss in audiotape recordings. Lesser known among Dolby's achievements was the introduction of multichannel stereo sound to Hollywood films, known as surround sound, that was eventually used in home theater systems.

A member of the National Inventors Hall of Fame, Dolby had 50 U.S. patents. His company won 19 Academy Awards and 13 Emmys. He died in 2013.



that produce the sounds we love. (Weren't we here before, in the 1970s?) They speculate about speakers that could be "painted on" entire walls for home theater systems. Floors and ceilings, too.

For those of us who prefer our speakers to be as inconspicuous as possible—even invisible—in-wall and in-ceiling speakers are becoming more advanced. So our loudspeaker options will continue to increase and improve, which sounds good to all of us. 🎧

Key figures and milestones in the speaker's evolution (left to right, then bottom): Werner von Siemens; Edwin S. Pridham; Peter L. Jensen; Oliver Lodge; Johann Philipp Ries's microphone.

One thing is certain: The moving-coil principle was a key innovation in the speakers we still enjoy today.



Instagram Stories Builds Connections

MAX OUT THIS WILDLY POPULAR PLATFORM IN MARKETING YOUR INVENTION **BY ELIZABETH BREEDLOVE**

MANY LARGE consumer product brands are finding success via Instagram Stories, and for good reason. According to Statista, 400 million people watch Stories daily—which is 80 percent of all daily active Instagram traffic.

If you aren't posting to Instagram Stories, you could be missing out in a big way. In this Instagram platform update, users can post photos or 15-second videos that are available for 24 hours before they disappear. All Stories show up at the top of the feed, and Instagram users can choose which Stories they want to watch. Content shared to Stories does not show up in the main Instagram feed or in a user's grid on his or her profile.

Adding to Instagram Story

To begin adding to your Instagram story, tap the camera icon in the top left corner of the Instagram app. From there, the options are nearly limitless.

Start by deciding what kind of post you want to create. Instagram offers many options and is always adding more, but on a basic level you'll be creating a slide of text, a photo or a video. I've gone into greater detail below about the types of content to post to Stories, but once you've decided what you want to post and typed out your text, taken your photo or recorded your video, the real fun begins.

At this point you can add text; "stickers"; animated GIFs; location tags; real-time information such as weather, music, hashtags, polls, and much more. You can also draw on your photo or video using multiple "pen" styles, or write text over your content in several different fonts and sizes. Essentially, there are endless ways to customize your content and ensure it's an engaging, eye-catching way to communicate with your target audience and help them build a relationship with your brand or product.

6 ways to use Instagram Stories

1. Provide a behind-the-scenes look at your company.

This is a great way to invite potential customers to see your company from a new perspective. You

can use Stories in many different ways to give your followers an inside look. This is your chance to provide exclusive content that isn't available anywhere else—and because of the casual, temporary nature of Stories, it doesn't necessarily have to be quite as polished as an expensive, professional promotional video might be. Consider the following ideas:

- Give a video tour of your office or workshop.
- Take a photo of you using your product.
- Show off pictures of you at trade shows or other events.
- Include personal content occasionally to add a human element to your brand or company.

2. Host a Q and A session to answer all of your followers' questions about your company or product.

The "questions" sticker is perfect for use here! First, publish a post asking your followers to send you their burning questions, using the questions sticker. Once the questions start rolling in, you can begin to answer them on your Stories. Whether your followers ask questions about how to use your product, about what product you are inventing next, about your business, or about something else related to your brand, this is an easy, fun way to build a connection with your followers and get them more invested in your brand or product.

3. Post tutorials to Stories.

Professionally shot tutorials are wonderful, but they can be expensive. With Instagram Stories, your tutorials won't need to be quite as polished. Just film yourself showing off your product and explaining how to use it, then share it to your Stories. Keep in mind, too, that your tutorials don't necessarily have to focus solely on your product or invention; they can also involve something of likely interest to your target audience. For example, suppose you have a kitchen invention used for cooking. If you like to cook, film yourself making your favorite dishes, then post them to Stories! This is another way to connect with your followers and get them more engaged with your brand.

4. Get discovered with hashtags and geotags. Include a relevant hashtag or geotag in your Stories when it makes sense. This makes it much easier for new people to discover your content. The Explore tab on Instagram pulls content using these, and getting your content featured there will work wonders for increasing your followers. Plus, anyone can search a hashtag or location, and you will want your account to show up in searches so that more potential consumers can learn about your invention.

5. Send traffic to your website with swipe-up links. If you have a verified Instagram account or a business profile with more than 10,000 followers, you can use one of Instagram's most helpful features: swipe-up links. This means that you can add any URL to your Stories, and those who view your Stories only have to swipe up to view the content to which you are linking. If you are eligible for swipe-up links, use this feature to highlight products on your website, send traffic to blog posts, promote events and send traffic to any other content you can think of. If you aren't eligible for these, that's OK; you can still get a lot of value out of Instagram Stories, and as your account grows you'll hopefully hit the coveted 10,000 followers.

6. Curate Stories in Highlights. If you're posting great content and getting a good amount of views, messages and other engagement, you may be a bit disappointed to have the Story disappear after 24 hours. This is where Highlights becomes helpful. Any Story can be indefinitely saved to Highlights, which is essentially a highlight reel that shows up on your Instagram profile. You can create many different Highlights and organize them however

you want. For example, you could create a behind-the-scenes Highlight, a Q and A session Highlight, a tutorial Highlight and a links Highlight. Regardless of how you organize it, it's a good idea to save your best-performing content to Highlights. Also, if you realize you've forgotten to save something important to Highlights, don't worry! Instagram saves all of your Stories to your Archive. If you go to your profile and click the icon in the top left corner, you'll see all of your old Stories. From here you can easily go back and save whatever you need to your Highlights.

Instagram Stories are here to stay, and can be a lot of fun for the creator and viewer. 📱

Elizabeth Breedlove is content marketing 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.



There are endless ways to customize your content and ensure it's an engaging, eye-catching way to communicate with your target audience.



The Future of Inventing?

ARTIFICIAL INTELLIGENCE MAY CHANGE OUR ROLE TO BEING DEFINERS OF NEEDS **BY JACK LANDER**

LAST MONTH, I wrote about the return of the Luddites. As I was writing, I recalled witnessing the test of a robot prototype about 35 years ago.

Hard to believe, but that robot's appearance was almost identical to those we see today on assembly lines, welding the frames on our cars. I suspect that the relatively slow proliferation of robots in U.S. industry was more a matter of software limitations than mechanical limitations, maybe a bit of both.

Today, the accuracy and finesse of a robot handling a paint spray gun, for example, is truly amazing. Its "elbows" and "wrists" are able to rotate through angles that would tear apart human joints, or fracture a humerus.

This 35-year evolution of robotic manufacturing has conditioned me to believe that dramatic technological changes take time. I hear expressions like AI (artificial intelligence), quantum computing and self-teaching algorithms, and I think, OK, maybe implementation is faster these days; maybe in 25 years this will be the new technology. I have no idea of how soon, but I'm pretty sure that it will be a lot sooner than I'd guess if you asked me.

AI is self-teaching

So, here's what I'm getting at: Will AI enable a computer to invent better than you and I? My first inclination was to say, "No way!" But based upon what I've been reading lately, it looks like I'm behind the times once more.

According to Yuval Harari's latest book, "21 Lessons for the 21st Century," AI is more than linear improvement in programming. If you present it with a game such as chess, it can *teach itself* how to play and win against a human.

Harari cites the December 2017 chess game played by Google's AlphaZero program against Stockfish 8, the 2016 computer chess champion. Stockfish 8 calculated 70 million chess moves per second, compared with AlphaZero's snail-paced 80,000 per second.

But AlphaZero had learned to play chess on its own by playing against itself. Humans had not even taught it opening moves. Out of 100 games, AlphaZero won 28 and tied 72, and many of its strategies and winning moves were unconventional as judged by human chess experts.

How long do you think it took Google's AlphaZero to teach itself the winning strategies? A year? A month? No. Four hours!

Details remain for humans

Now, given a specified objective, can a programmer create an algorithm that will teach itself to invent better than a human? I'm sure that we inventors all want to say, "No way." But chess is very complicated.


After three moves by each player, the number of possible moves to complete the game are about 9 million. (A Google search reveals several different conditions and their answers, but all are well up in the millions.) AI inventing, I believe, will face fewer options than chess.

Thus, given a clear statement of an objective, it is not difficult to imagine that AI will someday not only invent but also offer half a dozen ways to achieve the desired objective—with an analysis of the pros and cons of each, including the cost to manufacture and the probabilities for getting a meaningful patent.

Where does this leave us as inventors? Hard to say.

Perhaps our role will change from that of inventing solutions to that of scouts and definers of needs, wants and problems. We'll also have to create the sell-sheets and prototypes that are helpful for engaging a potential licensee, and closing the licensing deal. And, of course, in our efforts to license our patents, we'll still confront skeptical marketing executives who, after an evaluation of our proposals, will turn us away for reasons they won't explain.

The computer may have finished its task of inventing, but we have the burden of persisting until a licensing deal is signed.



AI may someday not only invent but also offer half a dozen ways to achieve the desired objective—with an analysis of the pros and cons of each, and more.

Importance of writing

The idea that our role will change from hands-on tinkering to writing precise definitions of objectives is disturbing to most of us, I suspect.

I wonder how Edison would have felt if he typed into his super-computer the following: “Objective: a filament material that withstands heating to 3000 F, and resists oxidation.” And before he lifted his fingers from the keys, the word “wolfram” (tungsten) appeared on his screen. Edison, who is said to have performed more than 1,000 experiments before succeeding, would have been known as the entrepreneur who created the first practical lighting system—not the heroic, struggling inventor who created the first practical light bulb.

If AI does the brainwork of inventing, we’ll lose our nerdy image. And maybe those of us who got a red C minus in English composition will seek trades jobs, or be satisfied as homemakers

But maybe our school counselors will convince us that we can succeed as inventors if we learn how to write. After all, isn’t half of inventing discovering a need, want or problem to solve, and defining it? And isn’t writing it essential to fully understanding it?

I had an English professor years ago who repeatedly told the class, “If you can’t write it, you don’t know it.” I’ve argued both sides of that statement, and the professor wins.

Even when the invention pops into our heads without reducing the need, want or problem to words, our unconscious minds often define the objective for us visually, without our being aware. But to input such inspirations to a computer, we must back up from the assumed solution and reduce it to words that convey the objective. Sentence structure may not need to be perfect, but the key words that convey the objective must be present in some reasonable order.

One more adjustment

If AI is the inevitable future, we’ll have to adapt. And we can. Civilization is an adaptation of the past 10,000 years from our 200,000 years of history as *Homo sapiens*, the “wise and knowing man.”

We co-evolved skill sets that served the tasks arising from the division of labor. We became hunters, gatherers, caregivers, shamans, tool makers, carpenters, clothing makers, scouts, warriors and chiefs. These specialties are still deep in our genes, but we have adapted. The ancient hunter is now breeding and raising animals; the tool maker is machining metal, rather than chipping stone; and the forager is pushing a wheeled cart in a supermarket rather than digging roots and picking berries.

We *Homo sapiens* have survived, whereas all other *Homo* species are dead and gone. Perhaps soon we will be called on again to adapt to the next higher order of creativity, artificial intelligence.

In one sense, it is sad that we must function in a civilization that demands we leave our simpler roots. I’m reminded of a quote by Sigmund Freud, the “inventor” of psychoanalysis: “It is impossible to overlook the extent to which civilization is built upon a renunciation of instinct.”

In another sense, we no longer worry about becoming a tiger’s lunch. And we live twice as long as in the ancient past. 🐾

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.



Use Your Brain and Fingers to Dig Deep

A PRO'S TIPS FOR RESEARCHING WHETHER YOU HAVE A UNIQUE IDEA **BY HOWIE BUSCH**

THE LIGHT BULB goes off and you know you have a million-, maybe even a billion-dollar idea. The hair on the back of your neck stands up, and you can't stop smiling because you know this thing can make you rich.

But before you go out and buy yourself that Lambo, there are a few things you have to do first.

First, breathe.

Second, do research.

Third, do more research.

And fourth, dig deeper and do even more research.

I assume you've got the breathing part down. But before you start diving into the research, you have to know how to do it effectively. Most inventors have a habit of seeing what they want to see, not seeing what they don't want to see.

A number of my inventor students have told me their product is so unique, there's nothing like it on the market. When I did a simple Google search and sent them a link, they inevitably said, "Oh, I didn't find that in my search."

That's because most inventors don't really want to find it—because then they may not get that Lamborghini.

You have to do everything in your power to find your brilliant invention on the market. One, why would you want to waste time and energy if the same exact product already exists? And two, if you know everything that exists that's similar to your idea, you can design yours to be better and maybe get that Lambo after all.

9 important steps

Let's dig into a real-life example. Assume your idea is a physical product; say it's a hammer and screwdriver combination. Like nearly every person on the planet these days, you'll go to a search engine—probably Google. Smart move.

But let me give you a couple of pro tips on how to best use Google—and how to dig a bit deeper.

1. Expand your definitions. First and foremost, keep in mind that Google only searches what you tell

it to search. So you need to expand your search by expanding your definitions. Don't call it only what you might call it but what someone else might call it.

You might just search "hammer and screwdriver combo," but searching "hammer and screwdriver multi-tool" gives you quite different results. Use a thesaurus and try to be as creative as possible when coming up with search terms.

2. Use Google Images. When you do the Google search, you have other search options. Click on "Images" near the top of the page, and you can see if there's a product out there that looks similar to what you're envisioning for your product. Again, maybe you learn something that can make yours even better.

3. Go to Google Shopping. Click on "Shopping" within Google. That way you can see what is on the market and where it's being sold.

4. Search Amazon. Amazon has become the world's largest department store/flea market. Just about everything that is being sold is being sold on Amazon. So you should dig around there—and as with Google, remember to do multiple searches, using the various terms you used in Google.

5. Investigate online retailers in your product category. Using the example of the hammer and screwdriver multi-tool, search Home Depot, Lowe's and Ace Hardware websites.

6. Search crowdfunding websites. Kickstarter and Indiegogo (to name just two platforms) are great places for products to launch that are not necessarily sold anywhere else. Search these websites; you'll be amazed at the creativity. Again, use various terms that might be used, not just what you would call it. And again, just because someone did a Kickstarter or Indiegogo campaign on a similar product, that doesn't knock you out of the box.

7. Get to the store. It's really important that you also get away from the computer and go to an actual retail location. When you go there, you'll see where similar products on store shelves.

Envision your product within the store. Where would it sit? In the tools section, between the hammers and screwdrivers?

Great; now look at the companies making those. Those are the companies that will be your competitors if you're going to manufacture it yourself. But if you're going the licensing route, those "competitors" are actually the companies that would be licensing your product from you. So write down their names; take some pictures. Start getting creative. How can you improve your product even more?

- 8. Go to Google Patents.** At patents.google.com, type in those same searches that you typed into Google and the other websites. Read through the existing patents to see what's out there. Make sure that you aren't stepping on or infringing on someone else's patent.

As you search through these patents, there are certain things to note. Is the patent live, or has it expired? Is it a design patent (designated by a D before the numbers in the patent), or a utility patent?


Also pay attention to the claims that were made and ultimately granted. As you go through the patents there, scroll down to the bottom and see which patents that one cited as a reference. You can also see which ones that came after the one you're looking at cited it as a reference. This gives you a much fuller idea of the patent landscape for the product.

Even if you see something very similar, you may very well be able to figure out how to design around it. And as a last resort, maybe you can strike a deal with that patent holder. Remember, there's lots of ways to skin the cat.

- 9. Rinse and repeat.** Your idea may have been completely new and novel when you thought of it and did your initial research, but that doesn't mean in the 3-6 months or more you've been working on your idea or that you let it sit for that someone else didn't come up with a similar idea. It's good practice to re-do your research every few months, just to make sure.

The win-win

Even if you do find the identical product or a patent out there, I'd still call it a win-win. Because if the same product exists and you can't improve upon



You have to do everything in your power to find your brilliant invention on the market. It's a win-win, regardless of the result.

it, maybe it's time to move on to the next product. And your little bit of research probably saved you hundreds of hours and thousands of dollars. I'd call that a win.

If you saw a product that is similar but not exactly the same and you're able to improve upon it or design around it, now you have a better product to bring to market and you already know there's a market for it. So that's a win, too.

Now get out there and do some research. And if you get stuck, feel free to reach out to me—and let me know what color Lambo you end up with. 🚗

Howie Busch is an inventor, entrepreneur and attorney who helps people get products to market through licensing, manufacturing or crowdfunding. Possibly the world's least handy inventor, he has licensed many products, run a successful Kickstarter campaign and appeared on "Shark Tank."



Taking the Bite Out of Mosquitoes

SUCTION TOOL EXTRACTS INSECT POISON TO STOP ITCHING, STINGING, SWELLING **BY EDITH G. TOLCHIN**

I LOVE HOT WEATHER, but because I'm highly allergic to mosquitoes I dread going outdoors during warm-weather months at home in New Jersey. Sometimes I douse myself with insect repellent that has DEET but cannot tolerate the awful odor these products cause when coming in contact with the skin.

I've even tried citronella bug bracelets. They're cute because they come in different colors, so I can coordinate with my outfits and be a fashion statement. But you get what you pay for—and they also reek. What's an allergic gal to do? Enter the Bug Bite Thing.

Edith G. Tolchin (EGT): Have you invented anything before?

Kelley Higney (KH): I am the mother of two beautiful daughters, living in sunny south Florida. For the last 15 years, I worked in our family-owned business (third generation), A.C. Kerman, which supplies outdoor gear and equipment and specializes in international export and distribution.

I pretty much grew up in an office, started answering phones as early as I could speak, and could recognize every Federal Express, United Parcel Service and postal truck by the age of 3!

Since Bug Bite Thing's launch, it has now become my full-time job. I have always had that ability to really empathize with people and their situations, and that is one of the reasons Bug Bite Thing has become so personal for me.

EGT: How did this invention come about?

KH: Originally from San Diego, I was completely unprepared for how the mosquitoes would impact my family's quality of life when we moved to south Florida. I had tried every over-the-counter cream, repellent and natural remedy I could find, but nothing was working. We were miserable. Using my international background, I started doing some research and speaking with some of our customers on how insect bites are combated in other countries.

I discovered a tool that uses suction to remove the irritant that is left just under the skin from mosquitoes, bees, wasps and ants. By removing the irritant, the body stops producing the reaction that causes you to itch and swell. After trying the product, I couldn't believe how effective it was.

After years of suffering, there was finally something that was helping my daughter and me. We both typically get large welts with days of pain and itching. There was no question in my mind that I needed to make the product available to everyone that suffers like we do. That is how Bug Bite Thing was born.

EGT: How does it work?

KH: You place the plastic tool over a bite or sting, pull up the handles and hold for 10 to 30 seconds. The insect saliva and/or venom is suctioned into the removable cap that can be taken off and cleaned. It also reverses exposing a smaller opening, so the suction can be used on fingers or smaller areas.

You have complete control over the suction, so it is perfect for small children or people with sensitive skin. It fits in the palm of your hand, is chemical-free

Kelley Higney, with daughters Leah, 6, and Lilly, 1, saw her family was being affected by mosquitoes at home in south Florida.



“There was no question in my mind that I needed to make the product available to everyone that suffers like we do.” —KELLEY HIGNEY

PHOTOS COURTESY OF BUG BITE THING



and reusable. The product allows you to eliminate the problem versus masking it with creams and chemicals. There are clinical trials on the product that can be found on the bottom of our website.

EGT: Is it only for use with mosquito bites, or with other pests?

KH: The product works on mosquitoes, bees, wasps, ants and other biting insects. It is also effective at pulling out splinters and bee stingers.

EGT: Please share your patent experience.

KH: Protecting our brand was the most important thing to us, so we made the decision to hire an attorney. The process took about one year for approval on everything we were eligible for, including our trademark. We are very happy with the results.

EGT: Have you encountered any obstacles in the development of The Bug Bite Thing?

KH: The biggest obstacle we have faced is introducing this new concept of insect bite relief to the masses. We never anticipated how difficult it would be to just tell people about the product and spread

the awareness on a large level. Social media, word of mouth and the news have been our biggest driving factors.

Paid marketing has been unsuccessful for us because of the costs involved in comparison to the \$9.95 price of the product. The product's success has almost completely been driven by word of mouth and education.

Another obstacle we have had to overcome was, we are a one-SKU item. When we launched, we played around with the idea of introducing a line of products or other products that complemented the Bug Bite Thing at the same time. We ultimately decided we really wanted to stay focused on bringing awareness to the Bug Bite Thing without any distractions.

Big-box retailers do not like one-SKU items (especially priced at \$9.95). We had to work hard at driving enough awareness and sales history to prove that we belong in some of these big-box stores. Bug Bite Thing has just been accepted as a one-SKU item in CVS for spring of 2019!

EGT: Where are you manufacturing?

KH: The product is manufactured out of Denmark.

Leah Higney shows how to use the Bug Bite Thing: Place the plastic tool over a bite or sting, pull up the handles and hold for 10 to 30 seconds.



"I encourage everyone who has a winning product or invention to test the market and demographic before investing a ton of money." —KELLEY HIGNEY

EGT: Where are you selling?

KH: We currently sell on our website, Amazon and to select dealers. We have secured distribution in South Korea, where the product has become quite popular. As mentioned, we will be selling in CVS for 2019 mosquito season.

EGT: Please tell us about your 100-percent money-back guarantee.

KH: Our goal is for anyone who suffers from bug bites to get relief. To overcome any skepticism, we offer a 100-percent money back guarantee on the product so there is never any risk

to try it. Our goal is not to just sell a product; it is to give people who suffer relief. If you are unhappy with the unit, we encourage you to send it back!

EGT: How are you handling your PR?

KH: We currently handle all of our PR in-house. We have hired out multiple times but have found it to be not cost effective for our specific product.

The learning factor that surrounds our product has made it difficult for a third party to handle our PR. Many questions come up that would be difficult for someone who didn't know the product inside and out to answer.

Aside from our own social media posts, we reach out to bloggers, influencers and new stations. We are always looking to partner with any influencers, bloggers or reporters who may think their audience can benefit learning about the Bug Bite Thing.

EGT: Any plans to increase your product line?

KH: There is always the possibility, and I think eventually that would be something we would explore. Right now, we are focusing on spreading awareness in the U.S. and working with distributors internationally to make the Bug Bite Thing known worldwide.

We are also really studying who our customer is and what products may be of interest to them in the future. I am currently exploring a carrying case that Bug Bite Thing can be stored in to keep the unit clean in a travel bag or purse.

EGT: Any advice for novice inventors?

KH: You know your product and market better than anyone else. Always trust your gut. I was told so many times that I needed another supporting product or line of products to launch Bug Bite Thing. I was told this was a hobby or side business more times than I can count. I never let it be. I refused to believe them, because I was the one receiving daily feedback from our customers on how the product has been life-changing for them like it was for me.

I encourage everyone who has a winning product or invention to test the market and demographic before investing a ton of money. Reach out to networking groups or Facebook groups and ask for feedback. When we first launched, I thought my number one demographic would be mothers. I spent a lot of money designing packaging and content that specifically targeted mothers. It turns out that our number one demographic is grandparents purchasing for themselves and their families. We had to revamp our packaging and content to really connect with our largest demographic.

Recognize when to listen, ignore or respond to customer comments. When you are passionate about your product/invention, it is very easy to get defensive to some of the negative comments that are posted publicly or on social media.

If the comments attack you personally are truly offense or inappropriate, delete, report and ignore. If the comments may not be what you want to hear about your product, listen. Maybe there is an underlying manufacturing issue preventing the product from working properly, or maybe there is a hidden gem suggestion that you can incorporate for Version 2! Try to be involved with your customers as much as possible and encourage feedback. 🗨️

Details: bugbitething.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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2 Critical Steps to getting your NEW PRODUCT "out there"

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Pushing the Right Button

INVENTOR'S WEARABLE SMART MESSAGING
A HIT IN RETAIL ENVIRONMENTS **BY JEREMY LOSAW**

THE PIN-BACKED BUTTON is perhaps the most underrated fashion accessory in American history.

Often called protest buttons, these small metal dishes with pins on their backs have been worn by people to show their support for campaigns, causes, brands and phrases of whimsy for hundreds of years. From George Washington's presidential campaign to "I Like Ike" and the iconic yellow smiley face, these pins have acted as a silent bullhorn for our opinions.

However, pin-backed buttons have a major drawback: They can only show one message. (Recall how Jennifer Aniston's character in the seminal comedy film "Office Space" was famously shamed for not wearing enough buttons to show her flair.)

Inventor Andrew Zenoff likes the concept of wearable messaging. In a world that is increasingly dominated by screen time and dwindling face-to-face connection, he feels that showing support for a cause or just wearing a picture of something you are interested in can help foster conversation and connection between people.

So after many years of work, he has finally brought to market the wearable screen—called the Beam—to give people a dynamic wearable badge to help bring people together in public and retail settings.

'I need to do this'

The Beam is a circular, wearable badge that displays the image of your choice. The high-res screen is 50mm in diameter and only 10mm thick, making it easy to read but light enough to wear all day.

The device has Bluetooth to connect to an app, to push new images or gif animations to the Beam.

The on-board memory allows users to store 100 images to display slideshows or GIF animations.

The Beam is primarily for use in customer-facing retail environments as name badges, or signage to communicate store specials or company-wide announcements. However, personal versions are available in white or black for \$84 at beamauthentic.com.

Zenoff had the idea for Beam for nearly 15 years before he started working on it. He first thought of the concept of a wearable and changeable screen long before IoT and wireless technologies were mature enough to be feasible for this application, so he was unsure of how to execute the concept in an elegant way.

However, while on a well-deserved break after starting two successful businesses—including the acclaimed breastfeeding pillow, My Brest Friend—he attended a wearable tech conference in San Francisco. After two days of seeing the incredible innovations at the conference, he was inspired to work on the product in earnest.

The device has Bluetooth to connect to an app, to push new images or gif animations to the Beam. The on-board memory allows users to store 100 images to display slideshows or GIF animations.



“There was nobody doing anything that I was thinking about. ... It was like the match lit the gasoline.”

—ANDREW ZENOFF

“There was nobody doing anything that I was thinking about,” he recalls. “By the time I left that weekend, it was like the match lit the gasoline.”

He thought: “The time is now. I need to do this.”

Strategy was all-in

Zenoff commenced an aggressive development strategy. He was well capitalized from his other successful ventures but did not have much experience in tech. He started by learning everything he could about connected technology, then built a team of engineers and developers to bring the concept to life.

While many inventors may have started by building breadboards or rough prototypes with tools such as Arduinos, Zenoff had a different plan. He wanted to build as refined and beautiful of a prototype as fast as possible to solicit venture capitalists.

Though the product is straightforward in terms of function, the technical challenges were immense. It was difficult to marry a large screen in a device that could run a whole day on one battery charge and still be light and thin enough to wear all day.

“I wanted it to be really beautiful,” he says. “People are used to looking at their smartphones. If this didn’t look absolutely dazzling, it would be a negative.”

At one point he was managing eight different teams at the same time to solve the problems. Most of the time, iteration and capital was spent on the firmware.

The Beam’s technology is covered by eight utility patents and 24 design patents across multiple countries. That protection has come with a hefty price tag: Zenoff spent nearly \$1 million in patent filings and legal fees. He admits this was an aggressive strategy that he would be unlikely to replicate in future products, but he also feels that the intellectual property will be helpful if he decides to sell the company.

A shift in focus

Zenoff also went big when it came time to find a manufacturer. Instead of trying to start with a smaller boutique factory, he initiated talks with the

biggest electronics firms on the planet.

After some shrewd negotiations he was able to get Foxconn, the makers of the iPhone, to agree to manufacture the Beam. This was a major coup for such a small firm and has resulted in the highest-quality product possible.

Following two years of development, the Beam was launched as a consumer product in 2017. Andrew originally envisioned the product as a way for individuals to express themselves by displaying logos of their favorite sports teams, quotes, campaign slogans or other images. However, adoption was slow, and he realized it would take a lot of resources to scale it this way.

While taking the Beam to trade shows and conferences, he realized that conferences and enterprise applications were a perfect fit for the product. After just 90 days, he pivoted the focus to business-to-business applications.

Zenoff started pilots in retail environments where firms can create custom messaging for customer-facing employees with the device. Beam has completely transformed from a hardware company to a software as a service (SaaS) firm that sells subscription software to create and send messages to the Beam devices, and the devices are an accessory that is included as part of the licensing package.

Since the shift in focus, Beam has been gaining immense traction. Zenoff’s company just closed a funding round to inject additional capital into the business and is doing tests with firms such as Albertsons, Peet’s Coffee and even the Miami Heat. More tests are planned in 2019 as the company looks to expand internationally with users in Japan. 📍



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/.





The Challenges of Patenting Software

BE READY TO ACT QUICKLY, BEFORE TECHNOLOGIES CHANGE

BY CARLY BOON

I F YOU'RE AN INVENTOR with an idea involving software, speed is of the essence.

In developing a new product, one key consideration for inventors is intellectual property protection. Specifically, innovators should look to obtain patents on their products as early as possible in their idea's lifespan.

Early IP protection is especially important for those seeking to innovate in the software space because of the fast pace at which software technologies change. If an inventor develops a software with great potential, it is imperative for that inventor to receive IP protection as soon as possible so that he or she can mark that software personally before anyone else can, or before the software becomes obsolete.

Utility patents' rules

Because software is inherently a method, most of it is eligible for a utility patent. Software patents follow the same basic rules as other utility patents.

Such a patent grants exclusive use to the inventor of a useful, novel, non-obvious invention for a

period of up to 20 years. The United States Patent and Trademark Office grants patents after a rigorous and time-intensive application process and review.

The right conferred by a patent grant is "the right to exclude others from making, using, offering for sale, or selling" the invention in the United States or importing the invention into America.

Utility patents are the ones most commonly issued but also the most difficult to obtain. These patents protect any new and useful process, machine, article of manufacture, composition of matter, or new and useful improvements to existing products.

Software can be protected under the United States Patent and Trademark Office as utility if it is unique, tied to a machine, and offers an identifiable improvement.

The USPTO has established five elements for patent eligibility: (1) The invention must be a process, machine, or object; (2) It must have utility; (3) It must be novel or new; (4) It must be non-obvious; and (5) It must not have been disclosed to the public before the patent application. An invention must

“Software is difficult to prove as novel and non-obvious when it can be done by human activity alone, or another method other than the software.”

—J.D. HOUVENER, FOUNDER, CEO OF BOLD IP

qualify under all of these elements in order to move forward in the patent process.

Section 101 hurdles

Section 101 of the U.S. Patent Code is often cited as subject to interpretation as it relates to software. It states: “Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.”

A 2014 U.S. Supreme Court ruling in *Alice Corp. v. CLS Bank International* was seen by many as damaging to software patents and related business applications, although the ruling did not specifically mention patents. *Alice* and Section 101 are often mentioned together.

J.D. Houvener, founder and CEO of Bold IP, says: “Software is most vulnerable to be rejected for patentability” under Section 101. “Software is difficult to prove as novel and non-obvious when it can be done by human activity alone, or another method other than the software.

“If the process being done by the software can be done by someone’s brain alone instead, it’s not likely to be patentable.”

In order to be eligible for a patent, software must offer an identifiable improvement, such as making something more effective, efficient, or providing benefit beyond what a human is capable of alone. If the software mirrors or replicates an activity or a process that can be done by humans in real life, simply doing it on a computer in a virtual setting won’t make it eligible for a patent.

First-timer tips

As with any plans to patent, it’s a good idea to first conduct a patent search before starting the process to ensure someone else hasn’t already tried patenting a similar software. This can also give you clues on the patentability of your software.



When applying for a software patent, an inventor must show in the list of claims that the software is a process that has novelty, non-obviousness and utility. The claims must make it apparent that the software can’t be done by humans alone and that it brings a usefulness to human life that was nonexistent prior to the software’s inception.

An inventor should not simply try to patent the sequence of code itself. Software can be coded in many different ways, and patenting the code would close the door on improvements and iterations for the inventor.

Moreover, source code is trade secret unless it can be sold or licensed. If an inventor wishes to reveal source code, he or she should seek copyright protection.

Houvener also says that “In the list of claims, an inventor should always point back to hardware components, devices and physical components themselves. Show how the invention is saving time, saving space, increasing multi-party communications, increasing security, etc. Make sure to demonstrate the overall efficacy and benefit that your software uniquely brings to the table.”

Furthermore, point back to something 3D/tangible about the software in the patent claim, such as an actual device or machine.

Keeping in mind the added importance of speed, it is best for a software engineer seeking patentability to have the right system and legal team in place in order to capitalize on the software before the market changes. 📦

Carly Klein is a law student at Loyola Law School in Los Angeles. A graduate from Boston University with a B.A. in Political Science & Philosophy, she has previously served an Americorps term at the American Red Cross in Los Angeles on the Service to the Armed Forces & International Services Team.





National Association of Music Merchants (NAMM)

AHR (International Air-Conditioning, Heating and Refrigerating Expo)

2019 U.S.

TRADE SHOW CALENDAR

TOP SHOWS, MEETINGS, MAKER FAIRES OF INVENTOR INTEREST

I T MAY BE POSSIBLE to invent in a vacuum, but marketing, manufacturing and selling your invention is another story.

Chances are you will need help via important contacts, leads and direct sales opportunities—among the major benefits of the many inventor-related trade shows held throughout the United States each year. Surging attendance numbers at many of these shows is evidence of those benefits.

It's fitting that the invitation-only Consumer Electronics Show in Las Vegas, North America's largest trade show, leads off the calendar year of major events. Last year's CES featured more than 4,400 exhibiting companies, 1,000-plus start-ups and more than 182,000 industry professionals—with roughly one-third of the latter from outside the United States.

(In fact, some have speculated that CES has gotten too big.)

As general trade show attendance grows, so does the competition to dazzle potential business partners and make a lasting impression. The Trade Group notes that the days of an exhibitor standing behind a standard table with frame-mounted displays are all but gone, replaced by booths that are "a combination of various elements of theater, museum, and theme park."

This year's *Inventors Digest* list has expanded by more than 25 percent from last January's entries, adding general business events and maker faires. For the rest of 2019, the magazine will list each month's major events in the back of that issue. You can keep this list for reference throughout the year or access it at inventorsdigest.com.

JANUARY

January 8-11
International Consumer Electronics Show (CES)
Technology
 Las Vegas Convention Center
 866-233-7968
 ces.tech
 Not open to the public.

January 14-16
AHR (International Air-Conditioning, Heating and Refrigerating Expo)
 Georgia World Congress
 203-221-9232
 ahrexpo.com

January 23-25
PGA Merchandise Show
 Orange County Convention Center
 Orlando, Fla.
 800-840-5628
 pgashow.com

January 24-27
National Association of Music Merchants (NAMM)
 Anaheim (Calif.) Convention Center
 760-438-8001
 namm.org

January 29-31
IPC APEX Expo
Printed board electronics manufacturing
 San Diego Convention Center
 877-472-4724
 ipcapexexpo.org

American International Toy Fair



IPC APEX Expo

FEBRUARY

February 2-7
SPIE Photonics West
(Society of Photographic Instrumentation Engineers)
Biophotonics for brain research and health care; lasers; core optical components for consumer products
 Moscone Center
 San Francisco
 888-504-8171
 spie.org

February 5-7
Medical Design & Manufacturing West
(MD&M West)
Medical technology, from prototyping to full-scale manufacturing
 Anaheim (Calif.) Convention Center
 310-445-4200
 mdmwest.mddionline.com

February 10-15
IBM Think 2019
Technology
 Moscone Center
 San Francisco
 888-426-4409
 ibm.com/events/think

February 16-19
American International Toy Fair
 Jacob K. Javits Convention Center
 New York City
 212-675-1141
 toyfairny.com

February 19-21
NAHB International Builders' Show
 Las Vegas Convention Center
 202-266-8610
 buildersshow.com

February 20-24
Developer Week 2019
Artificial intelligence
 Oakland (Calif.) Convention Center
 No phone contact for show; submit form online
 developerweek.com





Game
Developers
Conference
(GDC)



South By Southwest
Conference &
Festival (SXSW)

MARCH

March 2-5
**International Home +
Housewares Show (IHA)**
McCormick Place, Chicago
847-292-4200
housewares.org

March 4-8
**International Wireless
Communications Expo (IWCE)**
Las Vegas Convention Center
800-927-5007
iwceexpo.com

March 8-17
**South By Southwest
Conference & Festival (SXSW)**
*Technology, start-up ideas,
pitch competitions*
Austin, Texas
512-467-7979
sxsw.com/attend

March 18-22
**Game Developers
Conference (GDC)**
Video games
Moscone Center
San Francisco
866-535-8997
gdconf.com

March 20-22
Global Pet Expo
Orange County
Convention Center
Orlando, Fla.
No phone contact
for show; submit
form online
globalpetexpo.org

APRIL

April 10-11
**National Academy
of Inventors (NAI)**
JW Marriott Galleria
Houston
813-974-4438
academyofinventors.org

April 10-12
ISC West
*(International Security
Conference & Exposition)*
Physical security industry
Sands Expo &
Convention Center
Las Vegas
800-840-5602
iscwest.com

MAY

May 6-9
WasteExpo
Solid waste, recycling
Las Vegas Convention Center,
south halls
203-358-9900
wasteexpo.com

May 7-9
National Hardware Show
Las Vegas Convention Center,
north and central halls
888-425-9377
nationalhardwareshow.com

May 17-19
Maker Faire Bay Area
San Mateo (Calif.)
Event Center
No phone contact for show
makerfaire.com/bay-area/

May 20-23
RAPID + TCT
3D manufacturing
Cobo Center
Detroit
800-733-4763
rapid3devent.com

JUNE

June 2-5
IFT19 Food Expo
(Institute of Food Technologists)
 Morial Convention Center
 New Orleans
 312-782-8424
iftevent.org

June 3-6
BIO International Convention
Biotechnology
 Pennsylvania
 Convention Center
 Philadelphia
 No phone contact for show;
convention@bio.org
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;
 submit form online
e3expo.com

June 11-13
Medical Design & Manufacturing East
(MD&M East)
Medical technology, from prototyping to full-scale manufacturing
 Jacob J. Javits
 Convention Center
 New York City
 No general phone number
advancedmanufacturingnewyork.com



JULY

July 9-11
Intersolar North America Exhibition
 Moscone Center
 San Francisco
 No U.S. phone number
intersolar.us

July 17-20
AWFS Fair
(Association of Woodworking & Furnishings Suppliers)
 Las Vegas Convention Center
 800-946-2937
awfsfair.org



SuperZoo

AUGUST

August 4-8
AACC Clinical Lab Expo
(American Association for Clinical Chemistry)
Laboratory medicine, technology
 Anaheim (Calif.)
 Convention Center
 800-892-1400
aacc.org

August 20-22
SuperZoo
Pet industry
 Mandalay Bay
 Convention Center
 Las Vegas
 626-447-2222
superzoo.org





World Maker Faire New York

SEPTEMBER

September 21-22 World Maker Faire New York

New York Hall of Science
No phone contact for show
makerfaire.com

September 21-25 WEFTEC

(Water Environment Federation
Technical Exhibition & Conference)
McCormick Place
Chicago
800-666-0206
weftec.org

September 23-25 PACK EXPO

Healthcare packaging,
pharma production
Las Vegas Convention Center
No phone contact for show;
submit form online
packexpolasvegas.com

September 23-26 Solar Power International (SPI)

Salt Palace
Convention Center
Salt Lake City
703-738-9460
solarpowerinternational.com



Solar Power
International (SPI)



GO, OR NO?

7 TIPS TO DECIDE IF A TRADE SHOW
IS RIGHT FOR YOUR PRODUCT **BY DON DEBELAK**



TRADE SHOWS CAN BE EXPENSIVE, so it is wise to do some homework ahead of time to ensure they are a good fit for your product. Along those lines, consider these steps:

1. Ask your industry contacts, or any potential customers you may have talked to, which trade shows they attend regularly. If there are one or two shows everyone mentions, investigate those.
2. Try to attend a show a year before exhibiting. This is the best way to investigate a show and allows you to talk to small companies about their experiences. You will also be able to see exactly what type of an exhibit display you will need, and how your competition exhibits its products. Your booth has to be comparable or better than your competition's booths.
3. See if the show is sponsored by a major trade magazine or industry association targeted to your key potential customers. These shows often have educational seminars related to the industry and are typically the trade shows key buyers attend. Some shows are run by independent groups. My experience is that they are not as worthwhile.
4. Ask for a list of last year's trade show exhibitors, and for the floor plan from last year's show. Most trade shows will give you this if you call up their sales departments. Look first to see whether all of the main industry players exhibit at the show. Second, look for names of smaller companies with small booths. You want to see a variety of smaller companies exhibiting; they typically won't exhibit if they don't get a good return on their investment.

OCTOBER

October 9-11

ABC Kids Expo

Products for juveniles

Las Vegas Convention Center

210-691-4848

theabcshow.com

October 22-24

MWC Los Angeles

(Mobile World Congress)

Core mobile technologies, IoT-related applications, more

Los Angeles

Convention Center

No phone contact for show;

submit form online

mwcamericas.com

NOVEMBER

November 14-15

ISC East

(International Security

Conference & Exposition)

Physical security industry

Jacob K. Javits

Convention Center

New York City

800-840-5602

isceast.com

November 19-21

POWER-GEN International

All forms of energy

Morial Convention Center

New Orleans

No phone contact for show;

submit form online

power-gen.com



MWC Los Angeles
(Mobile World Congress)

No key inventor-related events in December.

Note: Contact shows to ensure those events are open to the public.

5. Call some of the small exhibitors and ask for their trade show manager, who usually will be the sales manager. Tell that person you are considering exhibiting at this year's show and ask whether he or she felt the trade show was a good investment for their company. After you receive some general feedback, ask these questions.

- Were there many of their target buyers at the show?
- Did the show have good traffic?
- Was the company satisfied with the number of leads it received?
- Has the company attended the show for more than one year, and will it go back next year?
- Was the company looking for sales representation—and if so, did it meet any potential reps?
- Was the meeting well attended by industry press? If so, did the company receive any press coverage?
- Were there unexpected costs of the trade show—i.e., costs of setting up the booth, charges for bringing the booth into the hall, or electrical charges for plugging in equipment?

6. Ask the trade show exhibitor salespeople whether they have a new product showcase, which is typically less expensive, or if they have another exhibitor who might want to share a booth. Find out if you can bring in your own booth and set it up yourself, or if you need it to go through the drayage company. The drayage handles, for a price, the movement of your exhibit items between your carrier's vehicle and your trade show booth space. Try to find options for keeping your expenses as low as possible.

7. Consider the impact of the trade show on your budget. Your costs include the exhibit, marketing materials and space rental charges, as well as travel and hotel expenses. If the costs are too high at a national show, consider attending regional shows—preferably in or near your geographic area. 📍

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.



URGING IP AWARENESS

SUMMIT CITES IMPACT ON U.S. ECONOMY AND WORLD STANDING

ANDREI IANCU has a message for new members of Congress who are being sworn in this month: Become better informed about the importance of intellectual property on America's economy and its standing in the world.

The director of the United States Patent and Trademark Office, who delivered the keynote address at the recent IP Awareness Summit in New York, also urged members in the audience to aid in that effort.

"I would urge folks in this room," he said, referring to the IP professionals, executives, leaders and educators present, "to talk about these issues with members (of Congress) in ways that relate to their priorities and constituents."

Other featured speakers at the second annual IPAS event on November 29 at the Columbia University School of Journalism included Manny Schecter, chief patent counsel of IBM and a member of the board of directors of the Center for Intellectual Property Understanding (CIPU);

and Adam Mossoff, director of the Center for the Protection of Intellectual Property at George Mason University College of Law. IPAS was held by CIPU, an independent nonprofit.


A key engine

In emphasizing the importance of intellectual property in America, Iancu noted that the word "right" is mentioned only once in the U.S. Constitution—and that is in regard to intellectual property rights.

"For the United States to maintain its competitive leadership, it is critically important that that we have an IP system and entrepreneurship ecosystem that encourages innovation," he said.

He added that IP is the engine that makes economic and cultural developments work and that the USPTO is focused on achieving these goals.

"For the IP system to work as intended," he said, "we must make sure future IP laws are predictable, reliable and carefully balanced."



"For the United States to maintain its competitive leadership, it is critically important that that we have an IP system and entrepreneurship ecosystem that encourages innovation."

—ANDREI IANCU, DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

IPAS 2018

In responding to an audience question about “conspiracy theories” alleging that the patent system is working against inventors and misconceptions created by perpetuation of the term patent “troll,” the director said we need to be specific about problems and “not engage in name-calling on either side of the issue.” He said he encourages more public debate and coming up with solutions.

The nature of an increasingly competitive global economy with escalating digital technology is also a factor in the importance of IP in America, he said.

“We live in a different world,” Iancu said. “For the United States to maintain its competitive leadership, it is critically important that that we have an IP system and innovation and entrepreneurship ecosystem that encourages innovation, that provides stability and predictability, so folks can invest here in the U.S. confidently.

“I think we are still the leaders, but we cannot take our eye off the ball. We have huge competition.”

Much at stake

IBM’s Schecter summarized that “We need to close the gap between awareness and understanding. We need to raise the level of understanding. We have too much at stake with it.

“We have to figure out how to optimize the benefit of intellectual property. ... If we’re going to get people to understand intellectual property, we have to overcome confusion, we have to overcome misinformation, we have to overcome our own rhetoric, and we have to overcome the pressure from our clients (and) speak honestly, to speak respectfully, and act the same way.

He added: “Those of us who really understand IP, we should feel an obligation to teach the others who need to know about IP but don’t, to help them learn. If we want our competition to respect our IP, we need to respect theirs. If we want other countries to respect U.S. IP, those other countries should see us in the United States behaving the same way toward each other.”

In addition to the featured speakers at IPAS 2018, there were four panels, 17 other speakers and three breakout sessions for IP owners, creators, educators, investors and others.

The CIPU is establishing an IP Education Resource Center to supply IP education materials. 📖

—EINPresswire via Center for IP Understanding



From top, left to right: Manny Schecter, chief patent counsel at IBM; former USPTO Director Todd Dickinson, senior partner at Polsinelli; Ken Seddon, president of LOT Network; USPTO Education Coordinator Joyce Ward; Maysa Razavi, International Trademark Association director of anti-counterfeiting; Adam Mossoff, Center for IP Protection, George Mason University.

Reigning Cats and Dogs

GROWTH OF PET PRODUCTS, SERVICES REFLECT ANIMALS' STATUS IN OUR HOUSEHOLDS **BY JOHN G. RAU**

MOST PETS can't talk, but statistics that underscore the growth of the pet products and service marketplace are speaking loudly. Would-be and accomplished inventors should be listening.

The American Pet Products Association says that about 68 percent of U.S. households own one or more pets. For these households, at least 42 percent own a dog, 33 percent a cat, 6 percent a bird and 20 percent other pets such as a horse, fish, reptile or small animal.

One of the fastest-growing industries in the world, this is a great potential source of invention opportunities. Based on APPA-developed statistics, total U.S. pet industry expenditures in 2017 were estimated to be \$69.51 billion, then to an estimated \$72.13 billion in 2018.

Top primary pet-related expenditure categories in 2017 were food (42 percent), supplies including over-the-counter medicine (22 percent), vet care (25 percent) and pet services such as grooming and boarding (9 percent).

High-tech pampering

As in other industry segments, a recent trend in the pet business is the use of digitization techniques and smartphone technology (some of which was illustrated in the July 2018 *Inventors Digest*, which featured a pets theme). Among the latest innovations:

- Litter-Robot III Open Air litter box, a Wi-Fi-enabled chamber, lets cats of all sizes do their business in private. The litter is automatically cleaned after each use, and the waste is deposited. You can remotely monitor the status of usage and change device settings if necessary. Product literature claims that for older cats, there is a nightlight for them to see in the dark. (I thought cats could see in the dark?)
- The Furbo Dog Camera and Treat Dispenser is basically a full-HD pet camera and two-way audio system, compatible with Alexa, that allows you to video chat with your pet and deliver him or her a treat from anywhere by use of an iOS/Android

app. You can conduct a two-way chat with the press of a button from the app and laptop integrated with a treat dispenser. It also has a two-way chat and barking alert that sends push notifications to your smartphone when it detects barking, enabling you to know what is going on at home and talk to calm the dog if necessary.

- Dogs aren't always patient about staying still for the camera. The Pooch Selfie consists of a custom cell phone attachment that sits on the top of your phone with a tennis ball placed within. The ball is supposed to help focus your dog's attention to enable you to snap a selfie or portrait.
- The Whistle GPS Pet Tracker is a Wi-Fi-based device that attaches to your pet's collar and uses smart technology to track its location and activity. The live GPS tracking lets you see where your pet is at any time of day.
- The G.O.A.T. (Greatest of All Time) Pet Speaker was voted by PetSmart in December 2017 as the season's top pet gift. This is a Bluetooth-based speaker shaped like a dog, cat or bird that can be clipped to a dog collar or leash, placed on the outside of a bird's cage or clipped to a person's belt. Music can be downloaded into the device and be used during daily walks to entertain both the pet(s) and humans. If your pet is often anxious, the speaker can be used to stream soothing music while you're home or away. The Black Cat speaker version was a "Shark Tank" winner in 2018.

Pet cafés? Don't laugh

Industry analyses suggest that the pet business will continue to boom unabated. Specific segments where there is anticipated growth (and invention opportunities) were highlighted by Alissa Wolf in her November 21, 2018 blog on the hottest pet industry trends.

One is natural pet products. This trend, which is largely health driven, includes examples such as holistic cat and dog food; cat litter; natural flea and tick repellants; holistic grooming products; products for older pets, and toys made with natural fibers.



The Furbo Dog Camera and Treat Dispenser and The Pooch Selfie are among the many latest pet innovations.





Industry analyses suggest that the pet business will continue to boom unabated, a great potential source of invention opportunities.

Because so many people treat their pets like humans, pet services are in demand. These include dog training, pet behavior consulting, pet portrait photography, pet sitting, a self-serve dog wash and mobile pet grooming.

Products and services associated with pet-friendly travel are also growing in popularity: pet-friendly travel apps such as those that can direct consumers to places that welcome cats and dogs, or travel containers for pets such as airline approved travel containers.

Another trend area where there may be invention opportunities involve the development of “pet cafés.” Think of a Starbucks full of animals!

Animal cafés are popping up in major cities all over the world featuring cats, dogs, woodland creatures and farm animals. There’s a dog café in Los Angeles that sells reservations online to enable customers to “mingle with dogs,” have food and drinks, and purchase merchandise.

Cat cafés dominate on the global animal scene and are becoming increasingly popular throughout the United States. There’s a cat café in Philadelphia that allows customers to enjoy bi-monthly events that include cat-and-wine nights and movie nights with the cats. A New York cat café offers snacks for you and the cats, and holds special events such as yoga and bingo nights.

There is also a famous pet café in Tokyo where, by reservation only, you can have snacks and pet the “furry friends” —in this case, hedgehogs! Inventive ideas are wanted for these new types of “restaurants,” including potential franchising opportunities.

Trade show opportunity

If you are serious about invention opportunities relative to pet products and services, you should attend the APPA-sponsored Global Pet Expo held annually at the Orange County Convention Center in Orlando, Florida. This year’s event will be March 20-22, according to the *Inventors Digest* 2019 U.S. trade show calendar in this issue. At this event, more than 1,000 companies from around the world showcase the latest and greatest products available for all types of pets.

The rise in inventions to benefit our pets reflects an observation in the recently completed APPA 2017-2018 National Pet Owners Survey: “Pets continue to be an important part of their owners’ lives, providing companionship and love, relieving stress and offering a host of other health benefits. In turn, pet owners are humanizing pets more than ever!”

Nineteenth-century U.S. humorist Josh Billings (aka Henry Wheeler Shaw) put Americans’ love of pets in perspective when he wrote: “In the whole history of the world there is but one thing that money cannot buy—to wit, the wag of a dog’s tail.” 🐾

Animal cafés are popping up in major cities all over the world featuring cats, dogs, woodland creatures and farm animals. Think of a Starbucks full of animals.



The G.O.A.T. (Greatest of All-Time) Pet Speaker is a popular and awarded pet gift.

John G. Rau, president/CEO of Ultra-Research Inc., has more than 25 years’ experience conducting market research for ideas, inventions and other forms of intellectual property. He can be reached at (714) 281-0150 or ultraresch@cs.com.





Patent Universe Expanding, With a Few Black Holes

UNCERTAINTY OVER PATENTABLE SUBJECT MATTER
STILL HURTING VALUES **BY LOUIS CARBONNEAU**

RECENTLY had the great pleasure of moderating the kick-off panel at the fifth annual IP Dealmakers Forum, a premier event attended by the main decision makers in the IP marketplace. The overall tone of the New York City conference was rather optimistic as to where the market is heading, though many participants agreed that the pendulum is not swinging back as quickly as they expected.

Tangible IP's panel provided the audience with the IP market roundup with an exclusive preview of the most recent data regarding the brokered patents market. The same data were "officially" published in the first week of December by IAM magazine. All data are courtesy of Richardson Oliver Insights, which has been tracking the secondary (sales through an intermediary) patent market for several years.

First, the good news: Like the universe, the patent market is expanding. Last year's sales increased to \$353 million from just shy of \$300 million in 2017. Note, though, that these numbers can be a bit funky, as many transactions are not reported and several others sell for a price of \$0 as part of a back-end deal structure (meaning the seller agrees to receive a percentage of the buyer's recoveries).

In absolute numbers of packages or portfolios, there was an 18 percent increase in the total that sold (591 packages in 2018 vs. 502 in 2017), and 191 transactions closed (through a straight sale, not including licenses), contrasted with 125 in 2017. This points to a more vibrant market.

However, also just like the universe, we find some black holes. Valuations are not yet inching any higher; we actually saw a decrease of 30 percent in 2018 to \$130,000 per patent (note: assets usually sell below their asking price).

Although this is a pretty significant decline, it results primarily from a loss of appetite from buyers to acquire single-patent portfolios that are considered

too risky in today's market. Asking prices for portfolios larger than one asset remained fairly consistent. Again, these numbers reflect asking prices.

Not surprisingly, the larger the portfolio, the lower the price per patent—reflecting a rule of thumb that each package contains only a few patents that are the true deal drivers. At the same time, the larger the portfolio, the more likely it is to transact.

Surprisingly, though—and despite the carnage subjected to software patents as a result of the 2014 *Alice* ruling—software patents still account for almost 60 percent of reported transactions. Even more surprising, and underscoring the level of patience patent sellers (and brokers) must arm themselves with, some packages still sell as far out as four years after first being made available to prospects.

When buyers pass on portfolios that would appear to be a natural fit, it is mostly because the assets do not fit their buying criterion. For instance, although it may sound intuitive to believe Microsoft will be interested in patents pertaining to operating systems, for Google to search related patents, Apple with phones, etc., these companies are already sitting on thousands of such patents they generated internally. They have little appetite to divert dollars to acquire more of the same.

When they do buy, acquirers either simply keep these patents in house to avoid or prevent a litigation or may use them in cross-patent licensing discussions. Still, more than 16 percent of patents sold in 2018 ended up in some litigation, highlighting that many buyers are non-practicing entities wanting to monetize the assets they bought.

As we discussed in a previous column, one of the main factors hurting patent values has been the uncertainty caused by the Patent Code Section 101 issue as to what constitutes patentable subject matter. This is directly related to the *Alice* doctrine of "abstract ideas" we refer to often.



Despite the 2014 *Alice* ruling on patent eligibility, software patents still account for almost 60 percent of reported transactions.

Enter United States Patent and Trademark Office Director Andrei Iancu. After tackling head-on many of the complaints regarding the Patent Trial and Appeal Board and the inter partes review process, he is now pushing toward a simplified patentability test that goes back to the genesis of the *Alice* case by the Supreme Court. The simplified test, which is set to be memorialized in new guidelines to examiners, would bypass the several decisions by the United States Court of Appeals for the Federal Circuit subsequent to *Alice* that the director claims are the real culprits for our current “morass” (Iancu’s own words).

I have often written about the fact that the weakening of the U.S. patent system has a direct impact on the investor community’s appetite to fund U.S.-based companies that rely heavily on IP protection (most do) for their long-term growth. Hence, as you have read before in *Inventors Digest*, capital is moving to other countries that are perceived to offer a better environment to start-ups.

China tops this list. A recent report detailing which cities are attracting the most venture capital, “Rise of the Global Startup City,” states that the United States, while still a lead player, is no longer the epicenter of all things new and technological. Other cities are attracting a growing share of the venture pie, especially those in China. Of the 12 cities receiving the most investment in start-ups, more than half are now outside America.

It is not too late to reverse course, but innovation and IP rights protection are the two faces of the same coin and must go hand-in-hand, as they used to.

Buyers and sellers

In the United States, **Microsoft** is reported to have signed a business partnership deal with **DJI** that includes the transfer of a portfolio of patents to the Chinese drone maker. It is easy to see a common theme here, as China’s most innovative entities are continuing to develop their overseas patent holdings. Currently, 39 of the 100 largest patent owners in China hold at least 10 percent of their portfolios in foreign jurisdictions. ...

To support its international litigation campaign targeting image/video processing technologies, **Dynamic Data Technologies** recently acquired some additional patents, directly from semiconductor company **NXP** (formerly Philips Semiconductors).

Winners and losers

The patent world is very binary when it comes to success. For every winner, there is usually a loser. The biggest recent loser was undeniably **Time Warner**, which failed in its appeal to overturn the decision granting U.S. carrier **Sprint** a \$140 million court award for Time Warner having infringed five of its VOIP-related patents. ...

Fairchild Semiconductor International will also need to write a significant check, as a jury awarded **Power Integrations Inc.** more than \$24 million in damages after finding that Fairchild willfully infringed Power Integration’s patents for frequency jitter technology. A week later, a jury found that Fairchild induced third parties to infringe competitor Power Integration’s power supply controller patent in another Delaware trial between the two rivals. ...



I'LL SEE YOU IN COURT

With an annual average of more than 5,000 new patent lawsuits in the United States only, we can only report those that get some press. Among them:

Boston Scientific filed a lawsuit against **Micro-Tech USA** and its Chinese manufacturer, **Micro-Tech Nanjing**, alleging that Micro-Tech infringed three of its patents for endoscopic hemostatic clips. In parallel, **Sprint Corp.** alleged that **Altice USA Inc.** is infringing 15 patents related to broadband or packet-based telephony products/services. ...

Serial litigant **Uniloc** (with 171 separate suits in 2018 at last report) launched an array of new cases against **Apple Inc.**, **Alphabet Inc.'s Google** and **Amazon.com Inc.**, scooping up scores of old patents from **HPE** and **IBM**, to name a few. Meanwhile, in China, a local NPE is going after **MediaTek** and **Coolpad** around 3G patents. ...

Back in the United States, **Twitter Inc.** and **BlackBerry Ltd.** are being sued by **Rainey Circuit LLC**, a Texas-based company, over multimedia messaging services deemed to infringe a patent it holds.

A federal judge ordered Australia-based **Cochlear Corporation** to pay more than \$268 million to the **Alfred E. Mann Foundation for Scientific Research** in a long-running patent dispute related to a hearing aid implant. The judge granted AMF's motion for enhanced damages due to a finding of willful infringement by Cochlear, doubling the jury's damages award. ...

An inventor got a nice pat on the back when a jury found that **Medtronic** owes an Indianapolis spine surgeon \$112 million for failing to pay him royalties on his spinal implant patents that he had assigned to the company 10 years prior.

Qualcomm was forced by a California judge to open its licensing program to chip manufacturers, not just device makers. If Qualcomm is forced to license chip suppliers, it could mean that it would no longer be able to collect standard essential patent royalties based on the price of the entire smartphone, resulting in much lower royalties. But it received some great news in China when a Chinese court agreed to block sales and the import of most iPhones, on the basis that they infringe several of Qualcomm's patents. This is huge win for the San Diego-based company and should no doubt put extreme pressure on **Apple** to settle its ongoing royalty dispute. ...

GE is having a hard time overall but recently dodged a bullet by succeeding to uphold in appeal the Patent Trial and Appeal Board decision invalidating four patents it was alleged to infringe by **United Technologies** around wind turbines. This is an area in which GE has had a fair amount of past success, asserting its own patent portfolio. ...

Academic cheating took a new twist recently when a federal court ruled that the **University of Wisconsin** defrauded **Washington University** in St. Louis of

nearly \$32 million in licensing profits linked to a successful Abbott Labs medicine. ...

Briggs & Stratton was reminded that the grass is not always greener on the other side, as a judge ruled that it willfully infringed competitor **Exmark's** lawn mower patent. ...

A federal judge ordered **10X Genomics** to pay nearly \$24 million to **Bio-Rad Laboratories** and the **University of Chicago** after a jury found that it infringed a droplet-based method of manipulating DNA. ... A jury in the Eastern District of Texas returned an infringement verdict against **Samsung** in litigation brought by German patent licensing firm **Papst Licensing**, awarding the non-practicing entity \$6 million in damage. ... Finally, a jury handed down a verdict in favor of Japanese monetization firm **IP Bridge**, finding that certain TCL smartphones, sold under the Alcatel OneTouch brand, have infringed two patents developed by **Panasonic** and now owned by the Japanese Sovereign Patent Fund.

Handshakes

Despite this flurry of fresh cases, there are still some people who know how to manage (or put an end to their) their disputes. After the recent lawsuit from **Broadcom** against **Volkswagen** attracted significant press, the parties quickly settled and the largest car manufacturer in the world is said to have taken a license to Broadcom's patents. Similarly, **LG** is said to have settled its dispute with the **Toshiba-Samsung** venture. ...

Canadian company **Blackberry** quietly ended its one-year-old lawsuit against giant **Nokia**. Neither party released a statement explaining the terms, if any, of the settlement. Nokia also entered into a multiyear licensing agreement with Chinese handset manufacturer **Oppo**, whose IP chief announced more deals to come. Licensing pool **MPEG-LA** secured an AVC/H.264 license deal with **Xiaomi**.

On the move

The USPTO has a new deputy director in **Laura Peter**, who is on record as vocally criticizing those who use the "troll" narrative to justify reform of the patent system. She should be expected to continue the new patent-friendly approach adopted so far by Director Iancu. ☞

Louis Carbonneau is the founder & CEO of Tangible IP, a leading IP strategic advisory and patent brokerage firm, with more than 2,500 patents sold. He is also an attorney who has been voted as one of the world's leading IP strategists for the past seven years. He writes a regular column read by more than 12,000 IP professionals.



COLLEGIATE INVENTORS WINNERS

UNDERGRADUATE AND GRADUATE STUDENTS HONORED
BY NATIONAL INVENTORS HALL OF FAME

A steerable microcatheter. A reusable UV-radiation-measuring sensor. Advanced optics that can project crop pests and diseases beforehand.

All were among the technological achievements selected as winners in the 2018 Collegiate Inventors Competition, a National Inventors Hall of Fame program for college and university students and their faculty advisers. The competition is sponsored by the United States Patent and Trademark Office, Arrow Electronics, LYCRA®, Wilson Sonsini Goodrich & Rosati and Bridgestone Americas Inc.

Gold winners: Undergraduate—Rhino, by the Massachusetts Institute of Technology team of Elizabeth Bianchini, Kyler Kocher, Ann McNroy and Sam Resnick (adviser, Warren Seering). The team devised a more efficient way to remove decaying, crumbling mortar from between bricks to subsequently replace it with new mortar—a process called joint raking. Rhino is a masonry tool attachment that improves accuracy and safety of joint raking, allowing masons to cover 50 percent more area during a given time.

Graduate—PionEar, by the Harvard University team of Nicole Black and Michael J. Kreder (advisers, Joanna Aizenberg and Jennifer Lewis). PionEar improves upon traditional ear tubes used to treat chronic ear infections. These tubes have limitations that include clogging, bacterial adhesion and premature extrusion. PionEar uses a bioinspired combination of 3-D-printed designs and a liquid-infused material, with the goal of reducing unnecessary revision surgeries to replace failed ear tubes.

Silver winners: Undergraduate—Radiex, by the Johns Hopkins University team of Jody Mou, Linh Tran and Kevin Tu (adviser, Amir Manbachi). Radiex refines the existing brain surgery process, in which a retractor with metal blades holds brain tissue apart to maintain a working channel. Radiex's cylindrical, compact design allows



Winning team members include (top photo, top row left to right) Charit Tippiareddy; Gopesh Tilvawala; Michael Kreder; (bottom row) Kevin Tu; Nicole Black; (bottom photo, top row left to right) Eric Salomon; David Pfau; Elizabeth Bianchini; (bottom row) Alex Zhuk; Linh Tran; Jody Mou.

surgeons to access the brain through the smallest point of entry. It then has the flexibility to gradually expand, increasing the surgeon's area of visibility without added pressure to tissue.

Graduate—Neurotendo, by the University of California at San Diego's Gopesh Tilvawala (adviser, James Friend). Neurotendo addresses the often ineffective surgical methods used to treat unruptured brain aneurysms by utilizing a steerable microcatheter that translates a neurosurgeon's command into the motion of the catheter tip. This micro-surgical medical device enables precise navigation, reduction of procedure times and a safer technique. Neurotendo also won the 2018 Collegiate Inventors Competition People's Choice Award.

Bronze winners: Undergraduate—CropDoc, by the Brown University team of Abigail Kohler, Jack Roswell, Eli Silvert and Alex Zhuk (adviser, Chandra Madramootoo). No current technology can identify specific pests and diseases on farms, which kill 20 percent of all crops before harvest and cause an annual \$990 billion loss in farm income. But using advanced optics and novel processing techniques, CropDoc provides farmers with actionable insights regarding the location and projected progression of pests and specific crop diseases, weeks before visual symptoms manifest.

Graduate—OSPRI, by the Case Western Reserve University team of Sanjit Datta, David Pfau, Eric Salomon and Charit Tippiareddy (adviser, Daniel Lacks). Optimized Solar Purification with a Reusable Indicator, or OSPRI, was developed to address the need of low-cost clean water in the developing world. Used with solar disinfection techniques, OSPRI is a reusable UV-radiation-measuring sensor that changes color to notify a user that the treated water is safe to drink. ☑

Answering Your Questions

WEIGHING IN ON 3D PRINTERS, DEVELOPMENT BOARDS AND TECHNICAL DEBT **BY JEREMY LOSAW**

ALTHOUGH inventing can often be solitary work, it is important to leverage the experience and skills of the inventor community to help grow our skills and offer advice. So instead of my normal discussion of prototyping techniques and industry events, I have opened it up to questions from you, the readers.

These questions were submitted by members of the Edison Nation community. I hope the answers will help you with your prototyping challenges.

John Nelson, Lake Ronkonkoma, New York: I am thinking of upgrading my prototype shop to include a 3D printer. I have some AutoCAD experience; however, I do not know what the most user-friendly 3D printers are, and what is a reasonable price.

3D printing continues to evolve at lightning speed, giving inventors access to great equipment that is affordable for the home or garage-based workshop. Printers are a great tool, but their drawback is that you need a three-dimensional CAD file of the part before you can print.

Modelling parts in 3D requires extra software and expertise, so this needs to be considered in any potential printer purchase. Students and teachers have no problem getting student licenses of professional software such as SolidWorks, but there are still free and low-cost options for the rest of us.

Tinkercad (tinkercad.com) is a great free program for beginners with its intuitive interface and lots of pre-build designs that can be leveraged. For those with

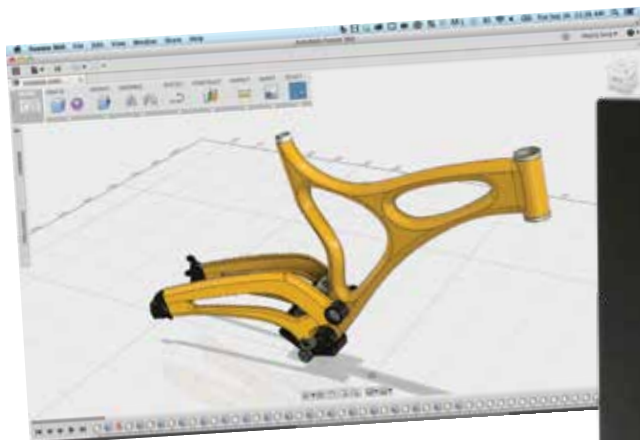
a bit more experience or who need a more powerful tool, I recommend AutoDesk Fusion 360. It is fully featured and economical CAD software, free to use for hobbyists and start-ups.

Unless you need an extremely big bed, I would stay in the \$1,000 range for an extruder-based printer. The key is to get a printer that does not have proprietary filament cartridges and will allow you the flexibility to run commodity or specialized printer material. The Prusa i3 and Lulzbot Mini 2 are both great options in that price range that offer great customer support and a wide range of materials.

Scott Tarcy from the Amazon show “3D Print the Future,” who does a lot of extruder-based printing, recommends the Ultimaker 2+. It has proven very reliable in his lab.

If you are more cost conscious and adventurous, I recommend the SainSmart Creality Ender-3. It is available for less than \$300 and has a stiff platform and good printing. However, because it is a commodity printer from an overseas firm, the documentation and support are not going to be as good.

Recommendations by our expert include AutoDesk Fusion 360, the first 3D CAD, CAM and CAE tool of its kind; and the Lulzbot Mini 2, a 3D printer with great customer support and a wide range of materials.

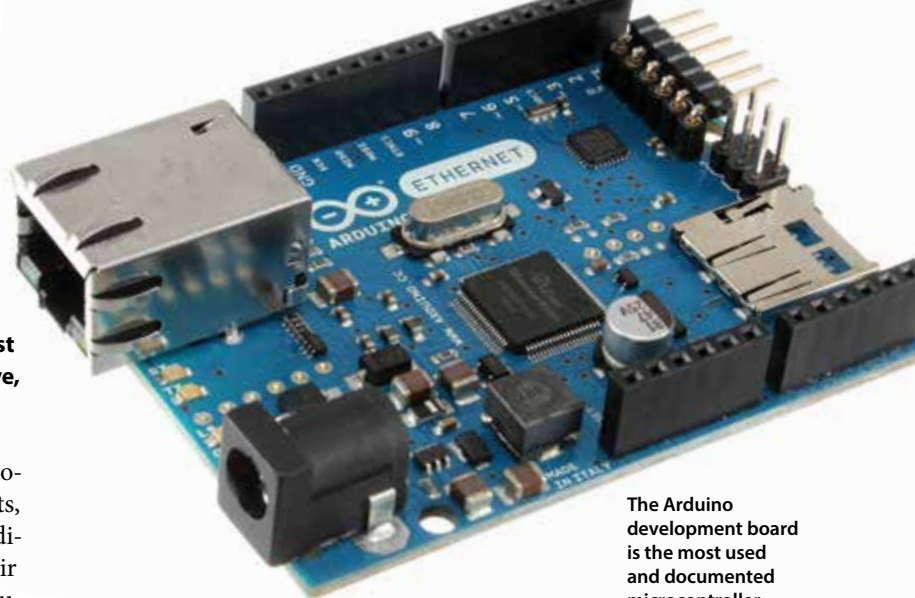


Derrick James, Beloit, Wisconsin: What's the best way to prototype electronic components if you have, at best, limited experience in this area?

Electronics and internet connectivity are driving innovation in nearly every sector of consumer products, so it is important for inventors to have at least a rudimentary knowledge of electronics to help build their prototypes. Fortunately, the open-source community has given us easy-to-use development boards and published a ton of content on how to use them.

I highly recommend starting with the Arduino Uno board. The Arduino is powerful enough for most applications, is the most used and documented microcontroller, and there is a lot of free code available to download and circuit diagrams that will help you wire it up. Sites such as hackster.io have nearly 4,000 projects built with Arduino with full step-by-step instructions.

Learning the Arduino programming language is really powerful, because the same integrated development environment and the C++ programming



The Arduino development board is the most used and documented microcontroller.

It is important for inventors to have at least a rudimentary knowledge of electronics to help build their prototypes.

language can be used to program lots of other microcontrollers other than the stock Arduino—including ESP8266 and other IoT development boards. Building a knowledge base with an Arduino foundation is likely going to be the most bang for your buck.

Mark Bartlett, Sarasota, Florida: I would assume 'function over form' would be the most important aspect of a prototype. The ability to provide recognizable proof of concept over aesthetic design would be the most important factor. Would you agree, and could you give any examples of crude prototypes that went on to become successful products?

I agree that early in the prototyping phases of product development, it is crucial to work out the function of the prototypes. When I discuss inventing and prototyping with inventors and clients, I like to use the concept of technical debt.

At the start of a program, you have 100 percent technical debt. You have no idea what the right technology is, or how to execute it. Through research, prototyping and iteration, the functional elements and dependencies are uncovered and the technical debt becomes lower until finally, you have nearly no technical debt when the product is manufactured.

In the early phases of the prototyping process, the goal is to decrease the technical debt of the innovation as fast and as economically as possible so that industrial designers can create a beautiful and iconic look for the product that can effectively house the technical elements of the design—and which is so crucial to



sell it. A great product that used crude prototypes to good effect was the Collar Perfect personal travel iron.

At the beginning of the project, one of the biggest questions we had was what shape the product needed to be to iron all of the different areas of dress shirts and other clothing. The team built about 30 different prototypes from foam core to test different sizes and shapes. The prototypes were inexpensive, fast to build, and had no internal working elements. However, they allowed us to narrow in on the hamburger shape for the product and led us to create the pivoting wings that defined and distinguished the product. 🍔

The Collar Perfect personal travel iron is an example of a crude prototype that achieved big success.

Lessons from Monopoly®

CHARLES DARROW BECAME A MILLIONAIRE BECAUSE HE WOULDN'T ACCEPT REJECTION **BY GENE QUINN**

CHARLES DARROW, an unemployed salesman, was struggling to support his family during the Great Depression. During this time he claimed to have fondly remembered summers in Atlantic City, New Jersey, and dreamed about being a real estate mogul. These diversions purportedly led to him formulating what has become the most popular board game of all time—Monopoly®.

Friends and family gathered to play the game, enjoying earning and spending large amounts of play money. Darrow felt certain he had a hit so he

contacted Parker Brothers, which initially turned him down after explaining that his game violated about 52 fundamental rules of a successful board game.

Thankfully for all who have played and enjoyed the game over the years, a reported 500 million people and growing, Darrow was undeterred. He marketed the game himself.

A patent 'monopoly'

As fate would have it, a friend of Sally Barton, the daughter of Parker Brothers' founder George Parker, bought the game. At the time, Mrs. Barton's husband was the President of Parker Brothers. One thing led to another and eventually Parker Brothers became convinced that this game, with minor modifications, could be a huge success.

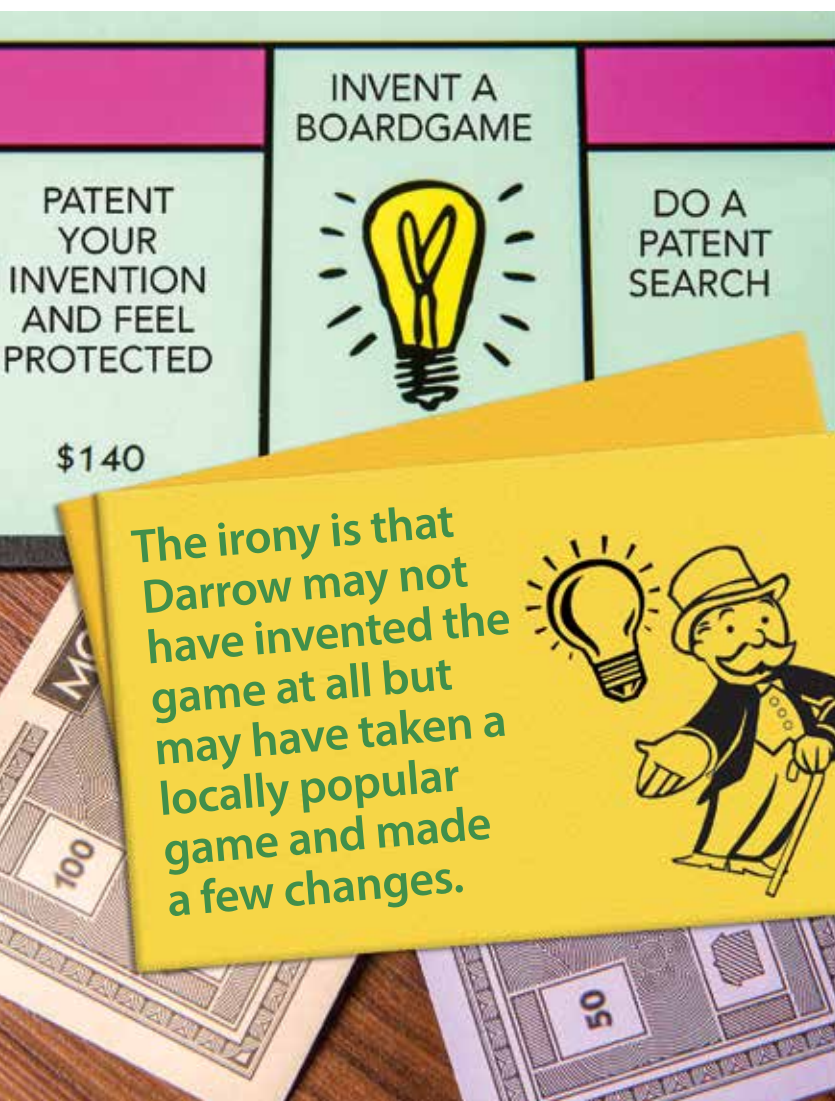
Darrow became the first millionaire game inventor, thanks to royalty payments. The irony is that Darrow may not have invented the game at all but may have taken a locally popular game and made a few changes. (Editor's note: A story in last January's *Inventors Digest* noted how Lizzie Magie's "The Landlord's Game," patented in 1904, was an unmistakable forerunner to the Parker Brothers classic.)

By the time Parker Brothers realized that Darrow may not have been the true inventor, the game was already a huge success. In order to protect the game and its investment, the decision was made to buy up all patents and copyrights on any related game, thereby ensuring something resembling a monopoly on Monopoly®. (A patent is not a monopoly.)

The story of this iconic board game provides inspiration to inventors who at first are told no, and for companies who acquire intellectual property rights.

Many board game patents

The first lesson for inventors is that you can indeed patent a board game. In fact, since 1976 there have been 1,241 U.S. patents issued with "board game" in the title of the patent itself, and 3,828 patents in which "board game" appears somewhere within the patent.



Many inventors skip the step of filing a patent application on their board game, which for those that turn out successful would be a mistake. Having patent protection on your board game allows you to prevent others from making, selling, using or importing a game that would infringe your patent. It also would give you an asset to transfer or license if there is enough interest in your game.

Some of those 1,241 U.S. patents are design patents, which are a weaker type of patent that only protects ornamentation (i.e., the way the board game looks, not the method or rules of play). But a design patent is cheaper and much quicker to obtain and is at least some protection. It may also provide a worthwhile advertising boost if marketed correctly. During the pendency of any patent application, you can say “patent pending” and once a patent issues the game is patented.

For companies, the failure to investigate ownership of an invention prior to licensing or acquiring the rights can be extremely problematic. Many companies will investigate which patents are out there before making an offer to acquire a license or acquire the patent itself, thereby not falling into the potential trap faced by Parker Brothers—namely, having an enormously successful property without owning all of the associated rights.

Due diligence is always appropriate in any business dealing, with the amount of diligence and investigation corresponding to the amount of the investment and potential return. Of course, sometimes in the business world things move fast, mistakes are made, or perhaps a choice is made that the risk presented doesn't seem that great and the expense of much diligence unwarranted given the likely return on investment.

But diligence up front and acquiring rights before there is an issue, or walking away if things look too messy, may be the best choice unless the likely return will be great enough to warrant the risk. At the end of the day, it is about making sure you operate in a business-responsible manner rather than making decisions without appropriate consideration.

Darrow was lucky

All worked out well for Darrow. But what if he had invested everything in the game, it took off, and then others with superior rights were able to stop him in his tracks?

This is a cautionary tale for inventors. The fact that Darrow got lucky should not be lost. Moving forward without reasonable investigation that a patent search can provide is risky and can find you investing unnecessarily large sums of money in a project that will likely never get off the ground.

Thus, it is always wise to start with a good patent search. It is better to spend an appropriate sum investigating on the front end. It will improve any patent application you file, because you will know where to focus your description to maximize the likelihood of articulating a positive uniqueness between your invention and the prior art. And if there are real impediments to obtaining a patent, you can cut the project before significant sums have been invested. ☛

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.



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IoT Corner

To help educate consumers and increase awareness of secure devices as the number of active IoT devices soars toward an estimated 10 billion next year, ThingsCon has launched the **Trusted Technology Mark (TTM)** certification.

In the same way that UL or CE marks provide visual evidence that a product has undergone general safety testing, the TTM will indicate that a product has been certified to be secure and not unnecessarily invasive. Certification will be based on competency on five core criteria: privacy and data practices, transparency, security, stability and openness. Upon certification, products will be allowed to use the mark on packaging and marketing materials.

The first products to be TTM certified are the Snips.io voice assistant technology and Vai Kai IoT-enabled wooden dolls.

—Jeremy Losaw



Wunderkinds

Katie Parkins, a 14-year-old who lives in suburban Chicago, is allergic to nuts, fish and shellfish. Going to restaurants used to be stressful for her because she worried about eating the wrong food. Her solution

was a teal card she calls MyTealTicket, which clearly explains her allergies and lists the nine most common food allergies: dairy, egg, fish, peanut, sesame, shellfish, soy, tree nuts and wheat. The server can write the actual order on the back of the card and present it to the cook. Mymealticket.com went live in July 2017.



What IS that?

It's pizza in 3 minutes via **Let's Pizza**, an Italian vending machine. Inventor Claudio Torghele says the machine makes the dough in 40 seconds, starting from flour and water. It then automatically shapes the dough onto a plate. Another device spreads on tomato sauce, and a refrigerated compartment opens and adds cheese and toppings. You can see the pizza bake in 1 minute.

77% The ratio of **start-ups that rely on personal savings** for their initial funds, according to Small Business Trends. Eighty-two percent of businesses that fail do so because of cash flow problems.

WHAT DO YOU KNOW?

1 Tennis legend John McEnroe trademarked which phrase?

- A) "You cannot be serious."
- B) "It's time to open your eyes."
- C) "When will you wake up?"
- D) "That is beyond ridiculous."

2 **True or false:** Thomas Edison proposed marriage to a woman by tapping Morse Code on her palm, and she tapped back, "No."

3 Which invention went on sale first—the Sony Walkman, or the Macintosh?

4 **True or false:** When James Alexander Dewar invented Twinkies in 1930, they were originally filled with banana cream.



5 Which pop/rock star said this? "People recognize intellectual property the same way they recognize real estate ... it's a new kind of property, and so the understanding uses new control surfaces."

- A) Bob Dylan
- B) Michael Nesmith
- C) Art Garfunkel
- D) Kris Kristofferson

ANSWERS: 1. A. McEnroe also wrote a book with the same title. 2. False. He did propose via Morse Code, but Mina Miller, who became his second wife, tapped back "yes." 3. The Sony Walkman was released in 1979; the Mac was introduced by Steve Jobs in 1984. 4. True. It's why the product has a banana-ish coloring and shape. A shortage of bananas during World War II caused the makers to switch to vanilla cream. 5. B. Nesmith's mother, Bette Nesmith Graham, invented Liquid Paper.

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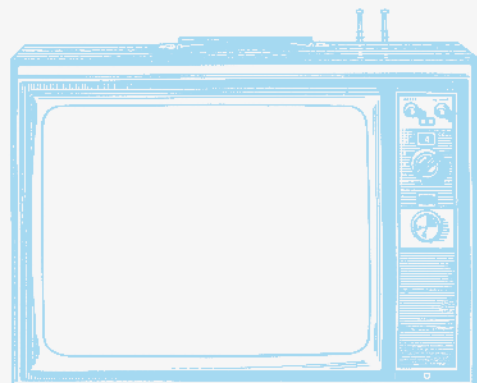
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