

# Inventors

APRIL 2017 Volume 33 Issue 04

DIGEST

## Toys and Games MEAN BUSINESS

JOIN THE SEARCH FOR THE NEXT GREAT TOY

**Lessons, Rewards Multiplied**  
FAMILY'S INVENTION  
HELPS KIDS LEARN MATH

**African-American Pioneer**  
CONSOLE CHANGED VIDEO GAMES

**'Pop' Goes His American Dream**  
PATENT SYSTEM HINDERS INVENTOR



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## The Popularity of Toys? Let Us Count the Ways



Many of us have heard the tongue-twister that requires us to say these two words fast, and three times: "Toy boat. Toy boat. Toy boat."

Now say this fast, and three times: "Two hundred and seventy one thousand four hundred dollars. Two hundred and seventy one thousand four hundred dollars. Two hundred and seventy one thousand four hundred dollars."

They're both a mouthful, but the dollar figure is decidedly more interesting—especially when it's a world record for the highest price realized for a toy boat at auction. Last May, a 38-inch-long antique Marklin toy ocean liner sold for that much at Vineland, New Jersey-based Bertoia Auctions. The winner was a private European collector.

The masterpiece was pristine and completely original; lifeboats, masts, four stacks and other details were like new. Lucky that when it was found in an attic—where it had been stored for decades—it was covered with dust and grime.

What?

Toy experts speculated that the layer of filth is probably what preserved the toy's original paint. Once cleaned, the original surface sparkled in the brand-new way that is so desirable for any toy, not to mention one made around 1800. The toy boat had the added appeal of being made in Germany, long a coveted distinction for antique toy collectors.

You don't have to be a deep-pocketed collector or investor to appreciate toys or games, which are a worldwide consumer staple destined to have eternal appeal to kids and adults. Because the multi-billion-dollar toy industry is fertile ground for inventors, our featured package this month provides tips for innovators; gets you caught up on the latest trends; and includes an interview with celebrated Furby marketing whiz and long-time kid at heart Roger Shiffman, who's helping Charlotte-based Edison Nation find the next great toy invention.

Maybe the most hopeful trend reported by Toy Industry Association senior communications specialist Kristin Morency Goldman is that even in our gadget-obsessed world, face-to-face, interactive toys and games continue to grow in popularity. There's something about human connection and quality family time that is more priceless than a \$271,400 toy boat.

—Reid

(reid.creager@inventorsdigest.com)



# INGENUITY IS AMERICA'S MOST VALUABLE RESOURCE.

**DON'T TREAT IT LIKE A CHEAP COMMODITY.**

Our strong patent system has kept America the leader in innovation for over 200 years. Efforts to weaken the system will undermine our inventors who rely on patents to protect their intellectual property and fund their research and development. Weaker patents means fewer ideas brought to market, fewer jobs and a weaker economy. We can't maintain our global competitive edge by detouring American innovation.

**SAVE THE  
AMERICAN  
INVENTOR**

**TAKE ACTION AT [SAVETHEINVENTOR.COM](http://SAVETHEINVENTOR.COM)**



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## ON THE COVER

A collection of current  
toy and game trends.  
Photo illustration by  
Jorge Zegarra

# BRIGHT IDEAS

## Love

### INTELLIGENT TURNTABLE

*kickstarter.com*



Controlled by your smartphone, the Love turntable stays faithful to the concept of a needle that plays the record—keeping the warmth and soul of the recording intact—but with no weight on the grooves. It retains the crackles and pops of vinyl records that many audiophiles say are synonymous with a truly authentic recording.

Love flips the traditional concept of a needle playing a spinning record; it turns counterclockwise on a still record. Although the turntable is compatible with all Bluetooth devices, it's not necessary to use an app. Place any size record on the turntable record base to scan the vinyl and determine speed. If you want to listen to Track 3, you can start playing the record by either pressing the top shell three times or selecting the track through the app. You can play, pause, skip to the next track or select the next track. Two record bases and a plug and play receiver are included.

The turntable connects to speakers, headphones, receivers and multi-room systems. It retails for \$599, with a planned shipping date of October. Love's Kickstarter campaign far exceeded its \$50,000 fundraising goal, bringing more than \$800,000.

## Zera

### FOOD RECYCLER

*zera.com*

Food waste accounts for about 20 percent of U.S. landfills, and the average family produces more than 400 lbs. of food waste per year. Zera cuts food waste by more than two-thirds its original volume through a fully automated process. The result is ready-to-use fertilizer, usually within 24 hours, that you can spread on your lawn, outdoor plants and garden.

Zera recycles almost all kinds of food waste, including meat and dairy. The three-step process: Slide open the lid and place the entire Zera Additive Pack inside daily until the recycler is full. Slide the lid closed and begin the transforming cycle, either by pressing the Start button or using the remote mobile app. Remove the output bin and spread the fertilizer outdoors.

The recycler requires minimal maintenance. The manufacturer's suggested retail price is \$1,199; October is the estimated shipping date.





"I do not think there is any thrill that can go through the human heart like that felt by the inventor as he sees some creation of the brain unfolding to success... Such emotions make a man forget food, sleep, friends, love, everything."

—NIKOLA TESLA

## Steadicam Volt

### SMARTPHONE STABILIZER

[tiffen.com/steadicamvolt](http://tiffen.com/steadicamvolt)

Made by a company that has provided shake-free videos for Hollywood for 40 years, the Volt improves on the original with technological advancements that allow you to capture memorable moments from your smartphone.

The simulated feeling of inertia on the pan axis improves the overall handling of the gimbal, providing maximum stability and provision. Features of the 1-lb., Bluetooth-enabled Volt include dual operating modes for beginners and experienced users; accommodation of phone sizes (with or without case) from 100g to 250g in weight, and 58mm to 85mm wide; an accompanying iOS and Android APP that allows for precise balance and tuning; works in manual mode even after the long-life, rechargeable Lithium Ion batteries are depleted.

Shipping is set for June, with a planned retail price of \$199.



## EcoReco Model R

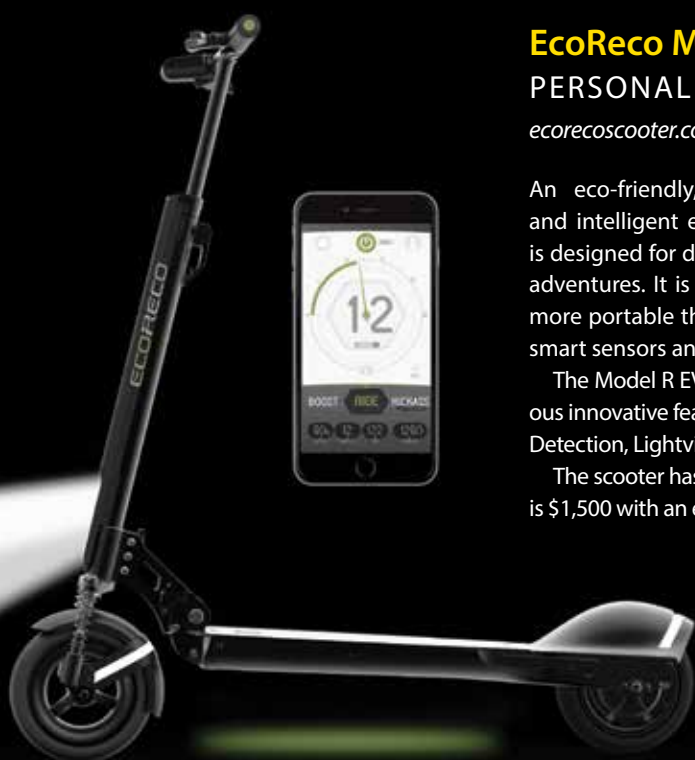
### PERSONAL ELECTRIC VEHICLE

[ecorecoscooter.com](http://ecorecoscooter.com)

An eco-friendly, energy-efficient, compact and intelligent electric scooter, the Model R is designed for daily commutes and weekend adventures. It is safer than a skateboard and more portable than a bike, with connectivity, smart sensors and maximum configurability.

The Model R EV—an update of previous models—has generous specs and numerous innovative features that include a Dynamic Battery Switching System, Carefree Fall Detection, Lightvigation, Tile location tracking, smart lock and rich configurability.

The scooter has a USB charging port on the Throttle/dash unit for easy access. MSRP is \$1,500 with an estimated July shipping date.





# AGAINST ALL ODDS, HE HAD GAMES

PIONEERING GIANT GERALD LAWSON HELPED PAVE THE WAY  
FOR A POP-CULTURE MAINSTAY **BY REID CREAGER**

**"For Honor."** "Halo Wars." "Call of Duty."

No, these aren't the latest war movies; they're among the hottest titles in video gaming—an industry that amassed \$91 billion in revenue in 2016, according to research group Superdata. Video games are so torrid in the marketplace that the Entertainment Software Association has been preparing for the possibility that President Trump could impose trade tariffs with other countries.

Gerald (Jerry) Lawson would likely be watching these developments with amazement. The first major

African-American figure in video games, the self-taught engineer is credited with inventing the first home gaming console that used interchangeable cartridges.

Lawson oversaw the development of the Fairchild Channel F console in 1976 while he was the director of engineering and marketing for Fairchild Semiconductor's gaming division. Both his career as an electrical engineer and his management position were major rarities for an African-American.

Up to that point, video games were built directly into their hardware, so you couldn't swap them out

Before Lawson's innovation, video games were built directly into their hardware.



to play something else. He enabled this by developing a console with its own microprocessor—a feat so unlikely at the time that the Federal Communications Commission took notice.

“The whole reason I did games was because people said, ‘You can’t do it,’” Lawson told the San Jose Mercury News one month before his death in 2011 at 70. “I’m one of the guys (that) if you tell me I can’t do something, I’ll turn around and do it.”

### ‘This could be you’

His determination bubbled at an early age while growing up mostly in Queens, with the encouragement of his parents and a special first-grade teacher. Lawson’s father urged him to pursue anything scientific, and his mother arranged for him to attend a quality (mostly white) school after interviewing principals all over New York City.

Lawson told the website Vintage Computing and Gaming in 2009 that his first-grade teacher hung a picture of George Washington Carver, the famous black inventor who was born into slavery, on a wall near his desk. “This could be you,” he remembers her saying.

“I’ll never forget that woman for that,” he said. “It was that kind of thing that made a difference.”

Lawson attended Queens College and City College of New York during the 1960s but did not receive a degree. By his late 20s, his love of science had spawned an interest in computing. In the early 1970s he moved to Silicon Valley and joined its Homebrew Computer Club, which included tech wizards such as Apple founders Steve Jobs and Steve Wozniak. (Lawson said in the 2009 interview that he was not impressed with either of them and that he later chose not to hire Wozniak at Fairchild Semiconductor.)



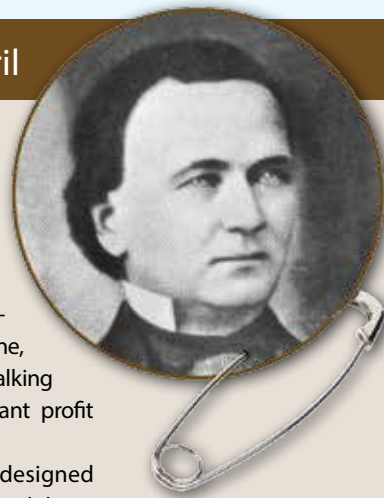
## INVENTOR ARCHIVES: April

### APRIL 10, 1849

The first safety pin was patented by **Walter Hunt**, one of the most unheralded prolific inventors in history. His hundreds of inventions included the lockstitch sewing machine, a saw, steamer, rifle, revolver, bicycle, bullets, ink stands, a nail-making machine, street-sweeping machinery and a ceiling-walking circus device. Hunt never realized significant profit from any of his inventions.

According to The Smithsonian, Hunt designed the safety pin in three hours to settle a \$15 debt to one of the draftsman who drew up his patents. Though similar pins had long existed, none was made from a single piece of wire. The draftsman, J.R. Chapin, later paid Hunt \$400 for all rights to every variation of twisted wire conceived by the mechanic/inventor.

Recently, the safety pin has become a symbol of protest in support of minorities and marginalized groups.



### APRIL 23, 1985



The trade secret “**New Coke**” formula was released. The Coca-Cola Company said the unofficially named, sweeter product was introduced to replace the original formula of Coca-Cola, though some claimed the move was a marketing ploy to counter growing competition by rival soft drink companies.

New Coke never caught on with the public. After less than three months of the experiment, the company—reportedly flooded with phone calls and 40,000 letters—announced the return of Coca-Cola “classic.” ABC-TV interrupted an episode of “General Hospital” to deliver the news on July 10, 1985. In 2010, Time magazine included “New Coke” on its list of the top 10 bad beverage ideas.

### APRIL 13, 1990

The “**Teenage Mutant Ninja Turtles**” movie was copyrighted. In the premiere film, four anthropomorphic turtles named after Italian Renaissance artists emerge from the sewers of New York City to protect it from a gang of criminal ninjas.

The concept originated in a comic book published by Mirage Studios in New Hampshire in 1984 before becoming a merchandising empire that included movies, a TV cartoon series, video games, toys and other merchandise. By 1995, the franchise had made a reported \$6 billion in revenue.

In early March, Variety reported that a new TV version of the show on Nickelodeon, “Rise of the Ninja Turtles,” “will introduce yet another version of Leonardo, Donatello, Michelangelo and Raphael to the reptile-loving public” next year.



The Channel F had its own microprocessor, something the FCC had been trying to accomplish.



**“THE WHOLE REASON I DID GAMES WAS BECAUSE PEOPLE SAID, ‘YOU CAN’T DO IT.’” —GERALD LAWSON**

Standing 6 feet 6 inches tall and one of only two black members in the club, Lawson continued a lifetime of standing out. He invented one of the earliest coin-operated arcade games, Demolition Derby, and had his career breakthrough with the interchangeable game cartridges after joining Fairchild in 1976.

## Leading the way

The Fairchild Channel F, rolled out a year before Atari’s famous video computer system, released 26 cartridges that featured sci-fi, sports and cards titles. Game machines, including the Atari and the Magnavox Odyssey, had their games built into the hardware.

The Channel F had its own microprocessor, something the FCC had been trying to accomplish. Lawson said the agency imposed strict requirements on all Channel F cartridges. Among them: The console motherboard had to be encased in aluminum, and there had to be a metal chute over the cartridge adapter to keep in radiation.

Lawson left Fairchild in 1980 to form his own company, Videosoft, a video game development firm that was to produce software for the Atari 2600. By then,

the processing power and speed of games were rapidly escalating—but to his chagrin, so was their emphasis on violence. Videosoft released only one cartridge, and that was a technician’s tool for adjusting color, vertical and horizontal hold on television sets.

He never officially retired, always working on projects even though his diabetes resulted in the loss of vision in one eye and having a leg amputated below the knee. A month before he died, Lawson was honored by the International Game Developers Association’s Minority Special Interest Group at the Game Developers Conference in San Francisco.

Joseph Saulter, chairman of the association’s Diversity Advisory Board, told the Los Angeles Times: “The minute I found out about him, I was so excited that I had to honor him in some way.” According to the association, only 2 percent of game developers were African-American as recently as 2005.

“I felt that his contribution to the industry was so immense, it brought tears to my eyes that he was never really recognized for his contribution to the industry.”

*Join the conversation: [inventorsdigest.com](http://inventorsdigest.com)*



# Know the Whys of Your Invention

UNDERSTANDING THE REASON FOR A PRODUCT OR SERVICE CAN HELP IN MARKETING EFFORTS

BY JOHN G. RAU

**I**n this space I've often discussed the reasons a product is marketable, and what inventors can do to make that happen. But to better understand that, it can be helpful to consider why people invent in the first place.

The idealistic answer might be to build a better planet, to help others, or to make life easier. Other reasons include curiosity, to solve puzzles, a sense of feeling creative, or a desire for fame and fortune.

Or sometimes, there's no reason at all. Mark Twain said, "Accident is the name of the greatest of all inventors." Many inventions are unintended and serendipitous, with invention history literature full of such examples.

One of the most noteworthy recent "inventions by accident" is Post-it notes. As the story goes, in 1968 Spencer Silver, a 3M chemical engineer, accidentally created a weak adhesive made of tiny acrylic microspheres that were nearly indestructible and would stick well even after several uses. He intended to use this adhesive as a sticky surface on bulletin boards for people to attach notes and other pieces of information, but 3M management showed no interest.

About five years later, he discussed this idea with Arthur Fry, another 3M chemist and frequent choir singer. Fry said that he had a problem in that he used pieces of paper in his hymnal to mark pages, but that when he opened his hymnal these pieces of paper frequently fell out. Fry then had his "aha moment": putting the adhesive on paper. That way, you could stick paper on anything. Eventually, one of the 3M laboratories picked up on the idea and successfully test-marketed it to expose it to the public.

## Laziness has its virtues

Some people invent merely to make their lives easier—or, as Agatha Christie surmised, "to save one's self trouble." A blog entitled "7 Reasons Why Lazy People Are More Likely to Be Successful" ([lifehack.org/312035/7](http://lifehack.org/312035/7)) may surprise you about the connection between laziness, inventing and marketing-related skills:

**1. Lazy people are inventive.** They are very creative when it comes to organizing their work, and they don't waste time on unnecessary things. Lazy people always try to make life easier.

**2. They are entrepreneurial** and often very enterprising. They have many ideas and projects, as their minds are not filled with excessive thoughts and responsibilities. It is important for them that the work process is not boring and that they are guaranteed results at the end.

**3. They know when to rest** because the more energy people expend, the less time they have to fulfil big plans.

**4. They are more relaxed.** Lazy people don't rush everything and don't jump from one thing to another all the time.

**5. They know how to prioritize** and to focus their own goals, not on those imposed by other people.

**6. They must be clever.** After all, they have to find ways to do nothing for a while and then to complete all of their tasks in time.

**7. They use technologies** that allow them to be lazy. Many tools (both hardware and software), as well as electronic devices and systems, allow people to do their job more efficiently and quicker. Lazy people know about all of these things and use them to get their tasks done generally more efficiently and quicker—allowing them to be lazy a bit longer.



One shouldn't necessarily infer from this that all inventors are lazy, but many illustrate one or more of these attributes.

## The sum of many parts

Just as a good marketing strategy often involves several components, writer and historian Richard Rhodes noted that many inventions have antecedents in the form of pieces of an idea: "Piecing these things together gives one a sense of where inventions come from, and that's interesting."

A case in point is the history of the internet. The "information superhighway" was a development activity started in the late 1960s, resulting in 1983 as the "network of networks" that became the internet as we know it today.

Building on this, the online world then took on a more recognizable form in 1989 when the World Wide Web was invented by computer scientist Tim Berners-Lee. The web has helped popularize the internet and now serves as the key tool that allows us to search through and for information from a variety of information sources.

Whether a new product or service is the result of an accident, laziness or building on the ideas of others, it's important to understand why someone created a particular invention. This knowledge can help in marketing efforts. You can't sell something well unless you know everything there is to know about it. 📌

**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](mailto:ultraresch@cs.com).



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# Know Who You Are Before Going Too Far

SELF-ASSESSMENT, EARLY MARKET RESEARCH SHOULD BE AMONG YOUR INITIAL STEPS **BY JOHN G. RAU**

**G**enerally speaking, inventors typically fall into one of five following categories:

- 1. People with one or more ideas** but don't know how to move forward.
- 2. First-time inventors.** You've decided to develop your new invention idea but need guidance as to how to proceed.
- 3. Experienced inventors.** You have filed and/or obtained one or more patents and maybe have even obtained a licensing agreement.
- 4. Professional inventors.** You make a living as an inventor, having commercialized your inventions, and probably have several projects in development.
- 5. Invention manufacturers.** You have established your own business manufacturing and/or marketing one or more of your inventions.

What's interesting is that, independent of which category you find yourself, there are "common threads" or common characteristics among people in these categories. Have you heard of the Keirsey Temperament Sorter, one of the most-used personality tests in the world? If not, you have probably heard of the Myers-Briggs personality questionnaire, one of the 16 role variants in the inventory.

However, there is also a variant called the "Inventor Rational" that describes general personality characteristics of inventors. Selected excerpts:

- Inventors tend to be expressive, introspective, tough-minded and probing (they like to solve problems).
- Of all of the role variants, inventors are most resistant to doing things in a certain way just because it was done that way in the past.
- Designing and improving mechanisms and products is their constant goal.
- Inventors have an entrepreneurial character and are always looking for new projects.
- Though full of ideas, inventors are primarily interested in those that can be put into action or used to make products.
- Inventors are often nonconformists and can have a circle of friends who are interested in their ideas or activities, who can provide feedback relative to their invention ideas.
- Ideas are great, but they don't tend to go anywhere unless they're paired with passion. Inventors fall in love with their idea(s), and love is what keeps them going. It doesn't feel like work.





## The “Inventor Rational” describes general personality characteristics of inventors.

Demonstration of these unique characteristics is illustrated in how inventors perform in the various aspects of the invention development process. For example, the “early inventors”—that is, those in the first two categories—are the ones who generally need the most help in getting started before moving on to the other categories.

### Research the market early

If you are just starting your “invention venture” and have one or more ideas but are not sure how to proceed, one of the first things you should do is find an inventors-type club or organization in your area where you can talk to other inventors to see what’s involved. Talking to the “been there, done that” crowd could give you some real insight into what to expect, as well as what to do and what not to do. You can find a list of such organizations at [inventorsdigest.com/resources/inventor-organizations/](http://inventorsdigest.com/resources/inventor-organizations/).

Another very important activity involves some type of preliminary market research to see which products or services are already in the marketplace that might be identical or perhaps similar to your invention idea(s). An internet search is helpful to get you started, but going to stores that might sell products like your idea would help. Also, seek out trade shows where you might find products exhibited relative the marketplace you would like to enter. Keep in mind that this is just a preliminary research effort to give you some indication as to whether it is worth your time to move forward and conduct further research. In other words, always do some initial homework!

If you are confident that it would be worthwhile for you to move forward and explore becoming a first-time inventor, conduct an initial patent search. You could do this yourself or hire someone. The many sources of this type of information include a basic Google web search by going to <http://www.google.com/patents> or the USPTO website [uspto.gov](http://uspto.gov). For first-timers, the USPTO provides a tutorial step-by-step strategy to help you get started. Keep in mind that this is just a preliminary search to see whether there are other like products or services that are already patented. Obviously, you don’t want to infringe on these.

Keep in mind that just because you find nothing like your idea, that doesn’t necessarily mean your new invention is patentable. Further investigation by the

USPTO, upon submittal of your patent application, will address this issue further.

### You’ll usually need lots of help

As a first-time inventor, you generally won’t be able to do it by yourself. You will need help! You should assemble a team of people to help you through the process. Exploiting a new business idea usually demands a range of skills that few first-time inventors possess. Getting legal help from a patent attorney or patent agent is important. You most likely will need people on your team with design experience, prototype developers, various types of engineers with experience in the applicable technology areas, individuals with finance expertise, marketing professionals and others. Having talked with other inventors will give you the guidance as to which types of skills and expertise your team members should have.

Recognize the potential need for prototype development, depending on the nature of your new invention idea and what you would like to do with it. You will need to prove to yourself—and perhaps later to investors and/or companies to whom you might want to license or sell your new product—that it works. This is called a “reduction to practice.” Your team members can help you with this.

You or a third party should also perform an invention assessment focusing on the market worthiness of your invention, where you investigate whether it is worthwhile to continue to put money into the development of your invention idea. Having a third-party opinion is more valuable than that of family and friends. If there is enough evidence to justify taking your idea further, move ahead. If not, go back and explore some new ideas.

Experienced inventors have been through the aforementioned efforts and have a good understanding of the steps involved. Professional inventors have mastered this process. They understand the marketplace, the competitive environment and what it takes to get a new product “out there.” Invention manufacturers have built a business developing ideas and converting them into new products that can be sold in the marketplace. They are the ultimate commercial developers, whereas professional inventors most likely have found licensees to develop and manufacture their new invention products for them.

Regardless of the type of inventor you are, think of inventors as providing value to society as evidenced by Johnny Carson’s quote: “If it weren’t for Philo T. Farnsworth, inventor of television, we’d still be eating frozen radio dinners.” 🍽️

## 5. Invention manufacturers.

# Lessons and Rewards, Multiplied Together

FAMILY'S INVENTION HELPS KIDS LEARN MATH **BY EDITH G. TOLCHIN**

**I**nventions resulting from family collaborations are an invaluable learning experience. They can also be a financial success if families follow all of the proper steps and the market is right. Velvet Alvarez of Bethlehem, Pennsylvania—a junior at Moravian College—and her mother, Isabel, are determined to make Math Game 2x3™ a hit.

**Edith G. Tolchin:** How did the game come about?

**Velvet Alvarez:** My mom always had issues learning her multiplication tables and always thought, “There’s got to be a better way to learn them that’s easier and quicker.” She also wanted to help my brothers and myself with our tables so that we didn’t struggle and to help us learn them by memory. We would play the game every night, and by the end of the month we both knew them all.

Math Game 2x3 was just an idea at first and then my mom thought of helping others with the game, so we decided to patent it. We currently have two patents. The patents cover all four methods of play, including multiplication, division, subtraction and division. We ran a crowdfunding campaign to help us make the addition board game (it met its \$8,000 goal) and help younger children learn basic math in a fun way.

**EGT:** How is the game played?

**VA:** Math Game 2x3 uses four aspects: time, competition, involvement and luck. Three to 11 players can play in one game. There is one judge and then two to 10 players. The judge holds the question cards, and the players are dealt answer cards. There are two timers (5 and 10 seconds each), but only one is used during the game—depending on the skill level. When playing the game, the judge will present a question card. If any player has the answer within their deck, they have to put down the correct answer before time runs out. It’s often related to the game UNO, because the goal of the game is to get rid of all of your cards.

**EGT:** What is the age range for this game?

**VA:** The age range for this game is best for children 7-16. They begin learning multiplication tables when they are in fourth grade and are expected to know them after fifth grade, but it is best to practice them all throughout middle school since it helps keep them fresh and helps with memorization.

**EGT:** Is this a bilingual game?

**VA:** Yes, the game is in both English and Spanish and is great to have in ESL classes or in beginner Spanish classes to help students learn their numbers in the opposite language while they play.

**EGT:** Tell us about getting this game patented.

**VA:** Once my mom thought of the idea, my dad made the suggestion to patent it. We never really thought about it until then. My mom and I began to do research and tried to find a patent lawyer who was in the area so that we could present our idea. We began to do patent searches to see if our idea already existed, and there was nothing like it so we proceeded with the process.

After fixing and accepting claims and a few years of waiting, we were notified that we had the patent. Later in the process, we thought it would be a good idea to make an app of the game or have an online version available. So to protect our method of play and designs, we followed through with another patent.

**EGT:** Did you manufacture in the USA, or overseas?

**VA:** We did research for several months on a variety of manufacturers in the USA and overseas. At this point I was a junior in high school and was preparing financially to pay for my college education, so pricing of the board games was important. All of the manufacturers here in the USA were unable to make a 5-10-second sand watch for a decent price. In China, we found a company that was able to make the game exactly how we needed it and gave us several options to pick from. The price was also within our budget.

We made sure to have all of our games tested and approved, health-wise, for children. For the shipment to the United States, an uncle suggested their company’s overseas shipping provider and we proceeded







**“We hope to finally produce all four games—which include addition, subtraction and division, along with the multiplication game that is already out. With these, we can offer a variety of packages to schools and reach children of all ages.”** —VELVET ALVAREZ

with them. They were of great help and taught me a lot within that market, since it was my first time ever doing this. Everything arrived as mentioned, and we received them at our front door. This was a very exciting moment for our family!

**EGT: Who designed your logo and packaging?**

**VA:** My aunt in Mexico did the final design that is present on our board games. My uncle from Texas created the very first design that was a lot more intricate.

**EGT: Do you have plans for other products?**

**VA:** Yes, we hope to finally produce all four games—which include addition, subtraction and division, along with the multiplication game that is already out. With these, we can offer a variety of packages to schools and reach children of all ages.

**EGT: Did you face any obstacles in developing this game?**

**VA:** One of the main obstacles through our process was the language barrier. My parents understand but have difficulty speaking English, so I am the translator for everything. This made it hard to do business with lawyers and manufacturers. ...

Being able to understand all of the big and difficult terminology that lawyers and manufacturers use in their contracts and patent claims took longer for us because we had to read everything while we translated every word we didn't understand, using the dictionary. Even being fluent in English, I couldn't understand all

of those documents because of the terms and language they used. Marketing is another one of our difficulties because we now have to sell the game and there is a lot of technique to doing that.

**EGT: Any words of wisdom for novice inventors?**

**VA:** They should not be afraid. It's a difficult industry to jump into, but there are so many small-business development partners out there that are willing to help and guide you in the right direction.

Always ask questions! Even if it seems simple and you might know the answer to your own question it is always best to ask, because so many new things will emerge from that question and you will learn from it.

**EGT: Velvet, any plans for after college?**

**VA:** Right now I am looking into research opportunities to expand my knowledge in microbiology and medicinal biology, as well as looking for jobs within my field. I plan to begin applying to graduate schools to pursue a graduate degree or my PhD if possible. 📖

Details: [mathgame2x3.com](http://mathgame2x3.com)

Edie Tolchin has contributed to *Inventors Digest* since 2000. She is the author of *Secrets of Successful Inventing* and owner of EGT Global Trading, which for more than 25 years has helped inventors with product safety issues, sourcing and China manufacturing. Contact Edie at [egt@egtglobaltrading.com](mailto:egt@egtglobaltrading.com).



Velvet Alvarez and her mother, Isabel, developed a bilingual learning tool targeted for ages 7-16.

# Slowly, Market Successes Take Weight off Inventor

BACKPACK ALTERNATIVE HELPS POSTURE, COMFORT, SHEDS LIGHT ON ERGONOMICS ISSUE **BY DON DEBELAK**

**P**hysical therapist Marilyn Miller von Foerster had what many would think is an inventor's dream—until she encountered a common but significant obstacle.

She created the BackTpack®, an ergonomically designed backpack substitute that loads the body properly through its central axis for proper posture and better comfort. But she didn't have the resources needed to educate the market and create instant success.

## The innovation story

Von Foerster has been a physical therapist since 1969, with a focus on back health and rehabilitation. In the 1980s, she was in Nepal and saw people carrying huge loads compared to their body weight, yet their posture was flawless.

She immediately noticed that the Nepalese used axial loading either by a traditional tumpline that is a strap for transferring the weight of the backpack's contents to the head and straight spine, or they used a bilateral system that loads on both sides. "The Nepali people moved with such grace and elegant posture," she said.

Von Foerster used their tumpline system for several weeks and experienced the postural response and pain relief. "I later met with a Nepali orthopaedic surgeon who said that there are very few spinal problems in Nepal compared with the West, which he attributed to their axially loading carrying systems."

Fast forward to 2001–2004, when her son, Nicholas, was in middle school. She saw that all students walked hunched over to keep from falling backwards with their heavy backpacks, resulting in bad posture habits and pain. Von Foerster realized that this is a global problem with schoolchildren, wrote professional articles addressing the problem, then went to work on creating her own backpack that utilized the principles of axial loading. She introduced the original

BackTpack in 2004; the company now sells four models, including the BackTpack Mini for young children.

Von Foerster's creation is based on the principle that when people carry weight they need to have good posture, and that the system they use every day trains their habits. A traditional backpack forces people to lean forward to keep their center of gravity over their feet. A balanced left-right approach allows wearers to keep their center of gravity over their feet in good posture. Having the load aligned with the vertical axis trains the muscles to respond vertically. Additionally, having the bags at the sides eliminates the frequent bending and twisting to remove the pack for access to contents or to sit down.

## Market need

Students' pain and posture distortion from using backpacks has reached the point that California, Delaware and Tennessee have enacted legislation to limit the weight of books a student needs to carry while recommending the use of an ergonomic system. Since 2004, von Foerster has been educating policymakers about a true solution: a carrying system that does not distort posture.

So despite what many people have assumed, the problem is not the weight carried by backpacks. The problem that has students bent over is the weight being on their backs, worsened by increased loads. Loading is essential for healthy bone and strength development, but only in good posture.

Von Foerster is convinced her product is a solution with health benefits for growing children and people of all ages. The BackTpack, with a suggested retail price of \$50 to \$120, should appeal to people concerned about posture issues and heavy backpacks.

## Marketing challenges

But people won't buy if they don't know her product exists. And educating the market has been a daunting task on a limited budget.

Von Foerster, who lives in Oregon, began her marketing efforts by starting a website (backTpack.com); exhibiting at physical therapy conventions and conferences; selling her product at the University of Oregon

The BackTpack is a carrying system that does not disrupt posture.





college bookstore, and other means. At an early convention, the director of the physical therapy program at Duke University learned of BackTpack and ordered them with the Duke logo for all incoming physical therapy students. This helped place the product into the Duke bookstore.

"I was excited to have this professional endorsement and support from Duke, and I thought sales were really going to take off," von Foerster said.

But follow-up sales didn't happen the way she expected. She visited the Oregon bookstore, asked the clerk about BackTpack, and the clerk had never heard of it. Von Foerster found the product buried on a shelf, explained exactly how it worked and gave a BackTpack to the enthusiastic clerk.

Thirty days later, she revisited the store—and it was the same story with a new clerk. The product just didn't have the sales support from display or on the package to sell itself.

Von Foerster pulled the product from the stores. She has since improved the point-of-sale materials and put the product into the Relax the Back retail chain and several other stores, but store sales have been disappointing.

She has continued to promote the product at physical therapist trade shows and conferences. Von Foerster has also found that she can make sales through several dealers specializing in products for blind or visually

BackTpack was developed by Marilyn Miller von Foerster with help from her husband, Andreas, and son, Nicholas.



**"The Nepali people moved with such grace and elegant posture. I later met with a Nepali orthopaedic surgeon who said that there are very few spinal problems in Nepal compared with the West, which he attributed to their axially loading carrying systems."** —MARILYN MILLER VON FOERSTER

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impaired people, who sell at targeted conventions and conferences. She has had some success getting mention of her product into websites such as the Posture Restoration Institute website, which has helped promote sales.

The BackTpack has increased sales revenue 20 percent per year since 2005, with most sales still coming from the website. But von Foerster feels the product should do better, because it offers a huge advantage over traditional backpacks.

### New approach helps

Von Foerster has recently redirected her marketing efforts, explaining: "I found that professional trade shows were not cost-effective and, at least at conferences for physical therapists, the attendees are more interested in presentations than purchasing products at booths.

"Now, I go to the physical therapy conferences as an attendee, earn CEUs (Continuing Education Credits), and respond to inquiries about the BackTpack I am wearing. I wear my bag to work, when traveling, and to all conferences, because it is the healthy and convenient thing to do."

The word of mouth has been a major benefit. One key contributor in that respect has been the Ball State University Department of Theatre and Dance, whose students have been using BackTpack for five years. Wearing the BackTpack has been required for the past several years.

Ball State's biomechanics lab did research with BackTpack vs. traditional backpacks, results of which are published in the journal *Gait & Posture*. This research demonstrated that BackTpack preserves natural posture compared to the postural distortion from backpack use with progressive loads. This evidence-based research is the foundation of current marketing efforts targeting the medical and scientific communities. Those efforts consist of sending information to key websites, journals and market influencers with the aim of getting the BackTpack mentioned in articles and speeches.

### Other options

As someone with decades of marketing experience, I suggested that von Foerster consider running a press release campaign and adding independent sales representatives. Such a campaign in mid-July would target writers charged with coming up with something fresh and new for their August back-to-school articles.

A site that is good for learning more on developing a press release program is [fitsmallbusiness.com/press-release-examples/](http://fitsmallbusiness.com/press-release-examples/).

Independent sales reps carry multiple lines that they present to their target customers, which are typically concentrated in one industry. I did a check on two companies selling products to physical therapists, Pro-Med Products Express and ScripHessco, and found that on their websites, both published a list of their sales reps. For more information on working with independent sales reps, see articles at [onestopinventionshop.net](http://onestopinventionshop.net) 📞

Details: [backTpack.com](http://backTpack.com); [info@backTpack.com](mailto:info@backTpack.com)

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







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o give you an idea of the sizzling growth in the toys and games industry, let's start with a subject that isn't as fun. Math.

A football field has a total of 57,600 square feet. The recent North American International Toy Fair in New York City—the biggest toy marketplace ever in the Western Hemisphere—had a record-breaking 444,309 net square feet of exhibit space, which amounts to about eight football fields filled with hundreds of thousands of newer toys and games.

There's your multiplication/division; here's the addition. Research by the NPD Group says the U.S. toy market grew to \$20.36 billion last year, a sales increase of 5 percent. Game sales were up 18 percent last year from 2015, which showed a 14 percent increase over the previous year.

Numbers alone aren't a reason to do anything, but these are inspiring to a lot of inventors. They're

finding exciting possibilities and invaluable contacts at trade shows that include the International and BeTerrific toy fairs, as well as at conferences such as Inventors Workshop. They like the vast diversity of products and trends. They relish the advantages of toys over other kinds of inventions.

Though virtually every invention comes with a host of adult decisions and stresses, there's something about the childlike nature of toys and games that attracts certain inventors. One lure is a perception of lower stakes, whether true or not.

"We are more ready to try the untried when what we do is inconsequential. Hence the fact that many inventions had their birth as toys," said philosopher Eric Hoffer.

There's certainly nothing inconsequential about conceiving the next Hatchimals or Pie Face, or landing a licensing deal with one of the billion-dollar toy companies. So with the math out of the way, here's more about this compelling and fun science.

—Reid Creager



# IS SERIOUS BUSINESS

TOYS AND GAMES ARE A BOOMING, VERSATILE OPTION FOR INVENTORS







**It's hard to believe** that more than a quarter century has passed since the movie "Field of Dreams" was showing in theaters. You may recall the famous line from that movie: "If you build it, he will come." The "it" is a baseball diamond; the "he" is Shoeless Joe Jackson, a baseball legend from the early 1900s.

Ray Kinsella, the farmer to whom the incorporeal voice had spoken, builds the diamond. Shoeless Joe shows up to play, along with the seven other Chicago White Sox players who had been banned from baseball for fixing the 1919 World Series.

The movie is fantasy, the players apparitions. But the faith that Ray had in the voice he heard is similar to the faith many inventors trust when we hear the call to pursue a great invention. We have to believe and follow that voice in order to accomplish anything. But we also have to determine where the red line is drawn between wishful thinking and the harsh reality of feasibility.

### A world of variations

Frequently, I work with uninitiated inventors—those who haven't been through the process of at least pro-

topping, and evaluating the patentability search and opinion prepared by a patent agent or patent attorney. The majority of those inventors stumble onto their opportunities for an invention during their daily routines. Many great inventions have come about that way. Unfortunately, the majority are duds due to having been invented before, or lack of market interest.

In the past 20 years, I've worked with inventors who have come up with several variations of flossing devices, pooper scoopers, handles to grip plastic grocery bags, toilet seat lifters, board games, and others that don't come immediately to mind. All of these have at least a few patents, and some have a great many.

Google.com/patents lists 20-plus pages of patents—10 per page—under the pooper scooper category. Although any page can have an occasional miscategorized product, the bulk of these are actually devices for cleaning up after Fido or Fluffy. I reviewed more than 100 patents on a search a couple of years ago. I then turned to Amazon.com, and again, I quit after viewing 100 such clean-up devices. (Type in 'pooper scooper' on Amazon.com if you think I'm exaggerating.)

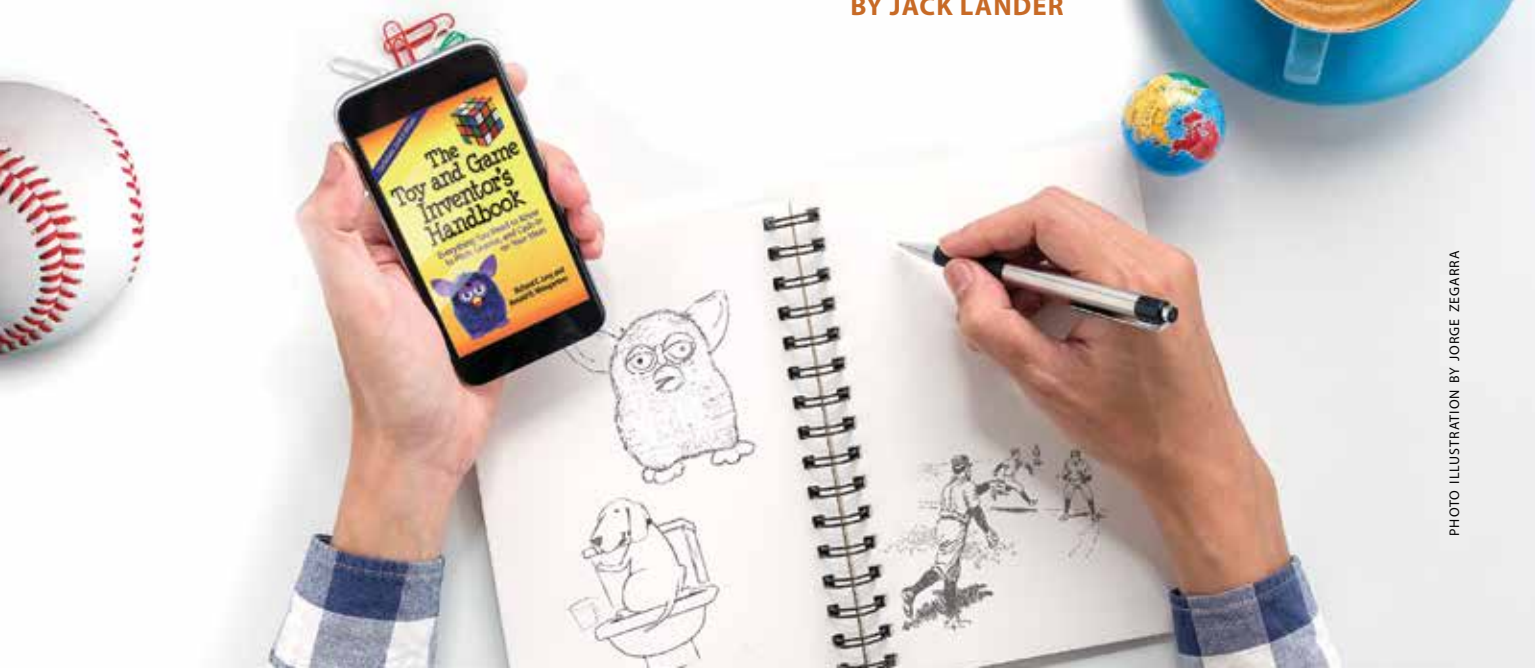
So, the moral of the story: If you stumble upon a popular problem, annoyance, need or want, it is improbable

## Play With This Idea:



YOU OFTEN DON'T NEED A PATENT,  
BUT MARKETING CAN BE A CHALLENGE

BY JACK LANDER





that you will find opportunity for cashing in with your great solution. However, there is one market that has an ongoing appetite for new versions of the same product, year after year, even though the market of the past was well satisfied. That is the toy market.

### Toys have their advantages

Now don't drop your *Inventors Digest* and run for your sketch pad. The toy market is a tough market to crack. But it offers one big advantage: Typically, you don't need a patent. The reason is that the life cycle of toys is too brief for a patent to provide much protection. Also, the high ratio of patent cost to royalty income may substantially reduce the profit to be gained.

Should you worry about submissions without patent protection? Not really. The toy business is run on the honor system, but beware of unethical brokers and agents. However, a self-written and filed PPA (provisional patent application) could provide a bit of protection for the year it is in force. And the filing cost is only \$65 if you qualify as a micro-entity.

But protection is not the major concern; marketing your idea is. Most large toy companies will not accept ideas submitted by inventors with whom they don't already have a relationship. Submit an idea through the mail, and you'll have it rejected without the recipient even having opened it.

The reason is legal liability. As with pooper scoopers, toy companies see the same inventions again and again and would have to spend a lot of time and money politely rejecting the unsolicited ideas. Also, occasionally it would happen that the independent inventor would invent a toy that was already being developed by the company. The inventor who believed he or she was being cheated could tie up the company in court and delay such toy's introduction to the market.

The solution is to submit through an agent. The problem here is that agents have the same potential legal liabilities as big companies. To get them to look at your toy invention, you probably will have to sign an agreement acknowledging that your patent rights are your only rights. That doesn't mean that you have to have a patent or even have applied for one. It is simply the way to get through to an agent in order to have him or her review your invention, and hopefully have him or her submit it to one of the toy companies with whom he has a relationship.

There is a parallel here with invention submission agents. Some are unethical; some are honest and effective. The difference is that the unethical agents want a lot of money up front and generally don't even act as agents, other than perhaps sending a form letter and a photo or sketch to a publicly available list—something you could do on your own. But invention submitters work with all categories of inventions, and you can't expect them to

have an established, face-to-face relationship with thousands of potential licensees. Toy agents, on the other hand, work with only one category—toys—and they know the decision makers in many of the approximately 1,000 toy companies in the United States.

### Searching for an agent

sssLevy is one of the inventors of the Furby, of which 40 million were sold during its heyday from 1998 through 2000. He and Weingartner disclose inside information that is not generally known outside of the toy companies or the offices of their cadre of independent agents. Weingartner led the Milton Bradley/Hasbro Games division and later served as director of development for Playskool. Their book includes a 22-page appendix titled "Companies Seeking Ideas." The list contains 51 toy companies that license products from independent inventors, with hints on how to approach them with your invention.



## One way to find an agent is to obtain a copy of Richard Levy and Ronald Weingartner's excellent book, "The Toy and Game Inventor's Handbook."

Apparently, the book is out of print except on Kindle. But Amazon.com shows 73 copies available at one cent: Yes, that's a penny plus \$3.95 for packing and shipping. You may be able to find it in your library, but I highly recommend that you buy your own copy if you are attracted to the prospect of toy inventing.

Whether we invent toys or pooper scoopers, we need to improve the odds of licensing by realistically assessing prior art—both patents and products. There is no point in working on a new version of the pooper scooper. The market is already saturated. The majority of toy inventions, however, bypass the patenting process. Although that sounds like 'free lunch,' with it comes the disadvantage of not being able to search patents to determine whether our invention is novel. Thus, our aim has to be highly imaginative and novel, based on clairvoyance for what toys will be hot a year or two from now.

If you build it, will they come? Nein, nyet, non, no! It's still up to us to go to them, even if you have invented the next Barbie or Hot Wheels. ☹

**Jack Lander**, a near legend in the inventing community, has been writing for *Inventors Digest* for 20 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](mailto:jack@inventor-mentor.com).





CLASSIC, LOW-TECH PRODUCTS LEAD A VERSATILE MARKET FOR ALL AGES



his certainly isn't the same toy landscape as when we were kids. Yet in many ways, it is.

If you think success as a toy inventor means you have to dream up the next revolutionary kids app or interactive device, think again—back to the kinds of toys and games that captured your imagination when you were growing up. The kinds of toys that required you to play outside, or create with your own hands, or sit down for some face-to-face interaction with family and friends.

It's a mistake to assume that high-tech toys are the dominant trend in the market, Kristin Morency Goldman told *Inventors Digest* after returning from this year's International Toy Fair in New York City. Goldman is a senior communications specialist at the Toy Industry Association.

"I think that as much as technology is evolving and becoming more prevalent in our daily lives, the fact of the matter is that kids like to play the way they have for generations: hands-on, low-tech, face-to-face, building, doing, tinkering. I don't think that's ever going to go away. ... The numbers obviously prove that."

Sales of classic toys—low- or no-tech products often with retro styling and materials, such as wood—

are on the rise. According to The NPD Group, games and puzzles were up 18 percent last year. The category includes older brands that were reinvented or reintroduced, broadening their appeal and promoting intergenerational play. (A moment of silence for Mrs. White, the housekeeper in the classic board game *Clue*: After 70 years, Hasbro decided to replace her last year with new suspect Dr. Orchid.)

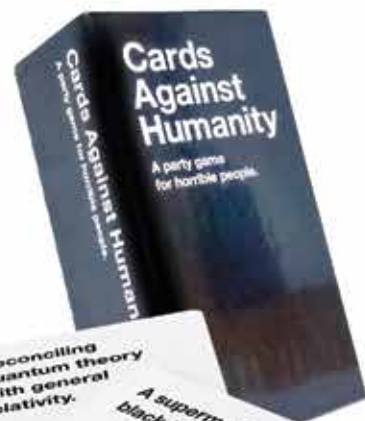
Family strategy games showed a sales increase of more than 50 percent last year. Adult party games have really taken off, with sales up 138 percent from November 2015 to November 2016. *Cards Against Humanity*, which calls itself the "party game for horrible people," leads a surge in risqué games for adults that includes an X-rated version of *Taboo* and *Trivial Pursuit*.

Some games seem to be categorizes unto themselves. Hasbro's *Pie Face* game, which has considerably more suspense than a postgame "surprise" involving a major-league baseball player, was chosen 2016's game of the year by the Toy Industry Association.

### Collectibles crushing it

Related toy groups as classified by the TIA are also surging. Collectibles are one of the highest growth areas, rising 33 percent last year (\$1.8 billion, per The NPD Group).





Fluffables (right) are among the hot new toys that children can personalize and design.





**“I think that as much as technology is evolving and becoming more prevalent in our daily lives, the fact of the matter is that kids like to play the way they have for generations: hands-on, low-tech, face-to-face, building, doing, tinkering. I don’t think that’s ever going to go away.”**

—KRISTIN MORENCY GOLDMAN, SENIOR COMMUNICATIONS SPECIALIST, TOY INDUSTRY ASSOCIATION

Left to right: Cabbage Patch Kids Lil’ Sprouts, Cubetto and FurReal Makers Proto Max reflect the diverse kinds of children’s toys.

The runaway leader in this category appears to be Hatchimals, one of the hottest toys of 2016. Described as kind of a cross between a Furby and a Tamagotchi (a small, digital pet hatched from an egg), Hatchimals are plush, chubby little animals that break out of an egg and go through five stages: egg, hatching, baby, toddler and child.

Hatchimals’ parent company Spin Master is building on last year’s success with the recent announcement of plans to unveil Hatchimals Colleggtibles this spring. They are about one-tenth the size of last year’s sensation but don’t hatch themselves. Perhaps most important, they offer a deep well of collectability, with more than 70 different Hatchimals available at the outset.

Among similar collectibles featuring cute characters that drew a mention during an International Toy Fair presentation were Fluffables, Cabbage Patch Kids Lil’ Sprouts, Sweetlings and Tokidoki. Madballs, a popular series of toy rubber balls with gross-looking faces, offers the other extreme; Shopkins has become a tiny

toy mainstay with its cutesy modifications of otherwise generic store items.

Higher-priced, licensed collectibles from popular movies and TV series also have a strong following, for kids and adults. In all, licensing-related toys represented about 30 percent of U.S. toy sales last year.

### Toys and tech

Pun intended, the Up & Active category is also climbing as parents worry about their kids having too much screen time. Scooters, trampolines and go-karts never really went away; it just seemed that way. They’re back and selling well.

Up & Active is a hybrid of low and high tech. The category includes tech toys that integrate active components and digital toys to promote face-to-face play. Richard Gottlieb, global toy expert and CEO of the Global Toy Group, told the BeTerrific Toy Fair last year that “I think the toy industry is really getting good at figuring out how to engage digital play and physical play together.”





One of the most anticipated such toys, unveiled at this year's International Toy Show, is the FurReal Makers Proto Max pet. Kids can program their toy dog's personality and code routines or specific actions. The app will be available for download in the Apple App Store and Google Play this fall.

Now that 3D printing has become more affordable, toy manufacturers are using advanced technology to improve traditional play and not replace it, Gottlieb noted. This has resulted in an increase in virtual pets such as the FurReal, as well as virtual reality toys, drones and robotics. The Hello Barbie robot is part of this trend, in which robots not only educate kids but are responsive and emotive.

"This is the world that children are going to live in as adults," Gottlieb said last year. "They're going to interact with robots."

The robotics movement is part of an educational category that the TIA calls STREAM—the latest expansion of the STEM concept (science, technology, engineering and math, which later evolved into STEAM and included arts). The added "R" in STREAM is for robotics.

The Zipes Speed Pipes Performance Pack starter set allows kids to quickly build a pipe in numerous configurations. Then, an illuminated vehicle and cosmic strobe ball race around inside for a dazzling view. The Techno Gears Bionic Bug features more than 80 construction pieces and a motor so that builders can follow the instructions or make their own motorized bug. Still in the screen-free category, Cubetto helps

children code by using a wooden, wheeled cube, a wooden coding board and a fabric map.

"The STREAM trend is very important," Goldman said, "showing that toys are pushing the limits on how they're teaching kids through play."

Games can also be educational on screens, of course—a segment that targets preschoolers and even younger kids. Marbotic helps kids learn about reading and math, using wooden letters and numbers and three free apps. Play-Doh Touch Shape to Life Studio combines traditional Play-Doh with virtual animation to teach creativity and problem solving.

"Items that can help inspire creativity and learning in kids had an especially strong showing" at the International Toy Fair, Scott Nygaard, senior vice president of merchandising and hardlines, told the TIA.

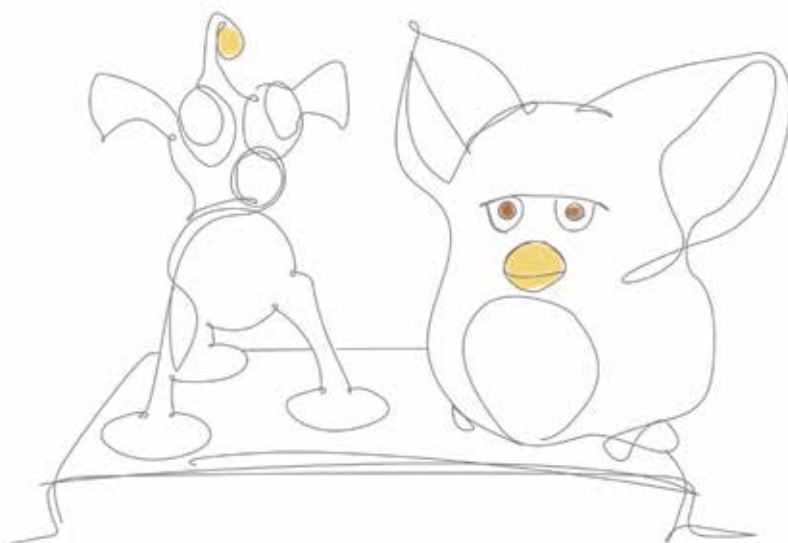
Goldman noted that "The great thing is how the toy phenomenon spans all ages. It's part of our culture and something that's not going away." 📱

Marbotic (left), which helps kids learn about reading and math, has three free apps. Madballs are the antithesis of cute and cuddly collectibles.

*Join the conversation: [inventorsdigest.com](http://inventorsdigest.com)*

## RESOURCE LINKS

- [toyassociation.org/tia/resources/inventorguide/resources/inventors\\_and\\_designers\\_guide/toy\\_inventor\\_\\_\\_designer\\_guide.aspx](http://toyassociation.org/tia/resources/inventorguide/resources/inventors_and_designers_guide/toy_inventor___designer_guide.aspx)
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# He Picks Winners

PARTNERSHIP TO FIND THE NEXT GREAT TOY INVENTION  
IDEAL FOR CELEBRATED INDUSTRY EXPERT ROGER SHIFFMAN

**R**oger Shiffman is a lot of things—the “billion-dollar hit machine” who was the marketing force behind the wildly successful Furby toy craze; a prolific inventor; an expert marketer and facilitator in producing popular kids’ products.

But he also wants you to know that he takes pride in successful collaborations, as was the case with Furby and FurReal Friends, and that he’s good at picking winners. That’s why he was a natural choice to partner with Edison Nation in their current search to find the next great toy invention.

Shiffman co-founded Tiger Electronics in 1998 and founded Zizzle in 2005. The latter received licenses to produce toys for Disney’s Pirates of the Caribbean franchise “High School Musical,” as well as Nickelodeon’s SpongeBob SquarePants and Dora the Explorer cartoons. As

long-term board member and past chairman at the Starlight Children’s Foundation, he has worked to bring happiness to millions of sick children worldwide.

Shiffman talked with *Inventors Digest* editor-in-chief Reid Creager about the mind-set of a toy connoisseur, his philosophies about toys, and what he’s been up to lately.

**Reid Creager:** What were some of your favorite toys as a kid? Why did they appeal to you?

**Roger Shiffman:** I loved building with an original erector set, working with my hands, creating, building and more. I also enjoyed a chemistry kit and a microscope to explore the tiny world. This was the era where we played with toy guns of all kinds. My all-time favorite was a rifle and target set with a moving target that had a photo sensor and the rifle “shot” a light. It made noise if you had a “hit.”

PHOTO COURTESY OF ROGER SHIFFMAN





Roger Shiffman, the marketing guru behind the Furby toy craze, has brought joy to millions of children as an inventor, facilitator and philanthropist.

# SECURITY THREAT? NEGATIVE



Elusive and spooky though he may be, the Spider-Man Talking Action Figure was never deemed a threat to U.S. security. Ditto the Minion Dave Talking Action Figure, even though he was branded as Despicable.

Only the fluffy little Furby holds that distinction among toys—so far as we know. In 1999, the National Security Agency, Pentagon and the Norfolk Naval Shipyard banned Furbies from their premises because they were considered a threat to eavesdrop on classified conversations.

Commercials for Furbies advertised them as “learning” English over time, apparently leading the NSA to believe the toys could mimic or play back conversations. But in fact, the Furby merely came programmed with words in English and “Furbish.” The BBC reported that anyone who spotted a Furby on NSA property was to “contact their Staff Security Office for guidance.”

In his role as Tiger Electronics president at the time, Roger Shiffman issued a statement assuring all that “Furby is not a spy!” Eighteen years later, he still shakes his head about it.

“I actually went on the news with Dan Rather and was interviewed by him about it,” he said. “I said that it really concerned me that our government would rule on something like this without having checked it out. There was no recording device whatsoever in there, no way this could be an impediment to anything we’re doing for national security. If this is the nature of how things are done, I’m really scared about our government.”

“Then after that happened, one or two weeks later, the Navy got ahold of the memo from them and issued the same thing, even though it was already resolved. ... We found it a little bit amusing that they didn’t ever call us; they never talked to us; they never looked into the unit itself or asked for any clarification. They just made this unilateral decision. So it was a little ironic. But you know what? It was more good publicity.”

— Reid Creager

**RC:** As a grown man, how hard is it to try to think like a child? Or—no offense—is this something that comes naturally?

**RS:** No offense taken. I think my child-like wonder and thinking is one of my best features in my success. I can relate. I’ve been quoted saying, “You’re only young once, but you can be immature forever.” I don’t find it difficult; in fact, I don’t even have to think about how to think from a kid’s perspective. When it comes to toys, I just have a great gut feeling.

**RC:** Have you had kids test a lot of your toys? What is interesting about them as critics?

**RS:** Yes, and the kids are great because they have no agenda. They are honest, and you can see almost instantly what they think about a toy, if they understand it, how to use it, if it keeps their attention, etc. I think we will be seeing this on the new TV show, “The Toy Box,” with new toys being judged on-air by kids.

**RC:** With all of the great toys you’ve had a role in inventing, what did they all have in common?

**RS:** I loved them all, almost like they were my offspring! Every one of them I believed in and expected them to succeed and be loved by all. Unfortunately, that didn’t always happen!

**RC:** When that doesn’t happen, is it sometimes a matter of timing? Luck?

**RS:** This is a long conversation, but I will say that some toys we did were way ahead of their time and didn’t work as I expected—though in later iterations from others, they did work. It was frustrating to have that happen.

I really don’t feel like any of our great successes were a surprise to me. I guess I always felt that each one was a superstar and that it would be fantastic, and luckily, many were. I haven’t been able to come up with that one real surprise toy—you know, the one that goes through the roof when you didn’t expect it. It would be easier to find those that disappointed, of which there were many, that didn’t reach the levels we had hoped.



**“I’ve been quoted saying, ‘You’re only young once, but you can be immature forever.’ I don’t find it difficult; in fact, I don’t even have to think about how to think from a kid’s perspective.” —ROGER SHIFFMAN**

**RC:** What inspired this next great toy search with Edison Nation?

**RS:** I have always loved seeing new ideas and trying to determine if they were potential successes for our business. I personally reviewed every submission that our people found and presented, looking for the right opportunities.

Now that I don’t have a company manufacturing toys, this is a great opportunity to once again review product submissions and get the juices flowing again about new product. And Edison Nation is an amazing resource to potentially partner in the development and licensing of the products.

**RC:** Why did you identify 2 to 6 years old as the sweet spot?

**RS:** That is my personal preference, to find products that appeal to this young group to help shape them with fun, creative toys. It’s also a group that doesn’t have to involve electronics and apps, though it could.

**RC:** Besides the obvious emphasis on technology, how have kids’ toys changed through the years?

**RS:** In addition to technology, there has been great emphasis on licensing. And as kids have gotten more sophisticated, it has taken work to make toys keep pace with them.

**RC:** Was it easier for you to promote and market toys pre-internet, or is it easier now? Why?

**RS:** Pre-internet was a simpler time. There weren’t so many choices—TV advertising, which is expensive, print advertising and basic PR. Now there are so many ways to promote and support products via the internet, but it’s also so crowded and fragmented. Breaking



through the crowd is essential, but creative use of the internet including social media can make it much easier and less expensive to bring awareness to your product.

**RC:** What are your other current projects?

**RS:** I’m not involved with a company, per se. I’ve worked with a lot of younger start-ups and have been advising them. I’ve been looking at different companies, looking to do some roll-ups and put some things together. It’s strictly been a situation where people have been looking to me for help or investments.

I’ve been trying to purposely be much less visible. For so long, I was so out there. The persona of the company was always me; I was in Time, the New York Times, you name it. It got to the point where it was so much that I just wanted a respite from that.

I still volunteer at Wharton; I do their annual business plan competition that just concluded. I also work with the University of Illinois business school, helping them. My wife always says I’m the busiest retired guy she knows. Well, I’m not retired. I just don’t have a company I’m working with right now. ☺

Roger Shiffman founded Zizzle in 2005. The company developed iZ, the world’s first interactive music character that can create its own music and play a listener’s favorite songs.

## ROGER SHIFFMAN TOY SEARCH

Roger Shiffman and Edison Nation are looking for the next great toy. Toy concepts can be in any category and at any price. Although Roger is open to reviewing all innovative toy concepts, he says that the sweet spot is toys for children between ages 2 and 6. The deadline for submissions is May 2, 11:59 p.m. Pacific Time. See [edisonnation.com/rogershiffman](http://edisonnation.com/rogershiffman) for more details.



# Myth: A Patent is a Monopoly

ISSUANCE DOES NOT GUARANTEE A MARKET  
FOR THAT PRODUCT OR SERVICE **BY GENE QUINN**

**M**any inventors operate under the mistaken belief that getting a patent is like owning both Boardwalk and Park Place in the popular board game Monopoly. Unfortunately, turning an issued patent into cash is much more complicated than simply placing hotels on Monopoly's two most valuable properties.

Those who are against patents or have a self-serving agenda argue that a patent is a monopoly, or they use those terms interchangeably. Don't be fooled.

Getting a patent does not result in the arrival of a money truck at your doorstep. Furthermore, the granting of a patent does not mean there will be a market for the patented product or service.

Monopoly is defined as "exclusive control of a commodity or service in a particular market, or a control that makes possible the manipulation of prices." Therefore, when there is no market, there can never be a monopoly because you cannot be in exclusive control of a non-existent market and you cannot manipulate prices when no one is willing to buy what you are offering.

The vast majority of patents result in rights being granted to cover a product or service that will not be

commercialized at all, or if commercialized will lose money because too few people are interested. That doesn't sound like a monopoly, does it?

A patent only gives its owner the right to exclude others from making, using, selling and importing. A patent carries no expectation for market success. Granted, if the product does have a market, a patent can be a significant barrier to entry into that market and insulate the patent owner from competition.

## Reminders from a judge

The late Howard Thomas Markey, the first chief judge of the United States Court of Appeals for the Federal Circuit, repeatedly reprimanded scholars, attorneys and fellow judges for characterizing a patent grant as a conference of a monopoly. In the 1983 case *Carl Schenck, A.G. v. Nortron Corp.*, Judge Markey stated:

"Nowhere in any statute is a patent described as a monopoly. The patent right is but the right to exclude others, the very definition of 'property.' ... It is but an obfuscation to refer to a patent as 'the patent monopoly' or to describe a patent as an 'exception to the general rule against monopolies.' That description,



moreover, is irrelevant when considering patent questions, including the question of estoppel predicated on prosecution history.”

So why has it become so widely popular to call a patent a monopoly? For those familiar with patent law, the answer is hardly surprising. As with so many stories of patent law gone awry, this story starts with the Supreme Court. The high court—a generalist court that has no particular foundation with innovation, technology or patents—has frequently referred to patents as a monopoly. It is oblivious to the reality that patent laws date to 1790, which predates the passing of the first antitrust laws in America by exactly 100 years.

The Supreme Court seems equally oblivious to the fact that it is impossible for there to be a monopoly where a market does not exist. I suppose, to be fair, it is possible that justices of the Supreme Court genuinely believe there is a market and associated monopoly for chastity belts for dogs, or a method for walking a snake, or a head mounted letter “M.” These and so many other issued patents demonstrate that getting a patent does not guarantee the presence of a market for the product or service—and if there is no market, how can the patent create market dominance?

### Push the protection envelope

However, there are even more reasons that it is inappropriate to think of a patent as a monopoly. Despite what you may have heard to the contrary, virtually no patent will lock up a market and hold others within the market hostage. Certainly there can be foundational technologies that are of extreme importance, but those types of inventions are extremely rare. Most inventions are improvements or incremental advances of different magnitudes. So patents are extremely fragile rights.

When you define your invention, you are essentially placing your stakes in the ground and defining the exclusive right you will obtain. It is hard to define your rights in the first instance with as much specificity and detail as required while at the same time anticipating what others will do and how they might attempt to get around those rights. Like most things in life, it is much harder to do in the first instance than to get around or undo later. Thus, when you have an innovation and you are making money from it, basic economics tells us that there will be others who will seek to enter your marketplace and compete.

Because of the fragile nature of patents, when you find an innovation that is lucrative you should not think in terms of getting a single patent. If there is money to be made, others will want into your market—so you

*A Patent* **ONLY GIVES  
ITS OWNER THE RIGHT  
TO EXCLUDE OTHERS  
FROM MAKING, USING,  
SELLING AND IMPORTING.**



must think about continually innovating, pushing the envelope of protection and obtaining more patents. If you do not, others will, and when they obtain patents on their improvements they will be able to exclude you!

### Learn from Kodak, Apple

Obtaining a patent and sitting back while competitors enter the marketplace is a recipe for bankruptcy. Just ask Kodak, which invented the digital camera and then allowed other companies to enter the market and dominate it—part of the reason the company filed for bankruptcy in January 2012.

I tell inventors all the time to model themselves after success, not failure. One company that every inventor should learn more about is Apple. Though the company has made some business mistakes, it is a true innovator. When Apple comes across an innovation, it patents it and continues to advance innovation and push the envelope of exclusive protection. An example is what the company has done with the letter “i.” There is an iPod, an iPhone, an iPad, an iMac and iTunes. When you find something that works, stick with it and get every inch out of it you can.

The moral of the story: Approach inventing as a business if you are going to make money doing it. Keep in mind that if something sounds too good to be true, it probably is.

The thought that a single patent can lead to a monopoly that unfairly or improperly holds an entire market hostage may sound like a good argument for those who hate patents, and it might sound very appealing for those who are inventors. But the truth is quite different. ☒

**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.



# My Excellent Vegas Adventure

EXCITEMENT AND ENDURANCE ARE ALL PART OF SETTING UP AT A TRADE SHOW **BY JEREMY LOSAW**

**I** put the box on the scale and watched the numbers on the digital readout rise as it caught up to the weight. Thirty, 40, 45 lbs.—just under the limit. The American Airlines representative looked up from her computer screen and asked for my ID and boarding pass.

“What’s in the box?”

As my sleepless eyes tried to focus on the box, for a moment I couldn’t remember what was in it. My brain finally caught up to the question and as the response left my lips, I knew there was going to be a longer conversation.

“An oven ... I mean stove,” I said blankly.

Clearly caught off guard, it took her a beat to recover. “What kind of stove?” she finally asked.

“A gas stove.”

There are not too many reasons to lug a large appliance on a cross-country flight, but going to a trade show is one. Just hours before my arrival at the terminal, my old Giant mountain bike box was cut down to size to fit the Whirlpool stove and acrylic backboard that I was taking to Las Vegas for the Consumer Electronics Show (CES). After more than a month of long nights designing and building prototypes of the Inirv React stove safety device, it was time to show it to the world.

The representative asked whether there was gas in the stove. I told her no, that it was brand new and was being taken to a trade show for a demonstration.

That calmed her down. The baggage claim ticket was stuck on the side of the box, and I watched it slowly crawl on the belt and through the rubber-fringed hatchway. Then it was off to the security line and later my favorite pre-flight treat, Jamba Juice.

## Eureka! I found our area

CES is one of the biggest trade shows of the year, held annually in Las Vegas in early January. It has more than 2 million square feet of exhibit space and draws nearly 200,000 attendees from all corners of the globe. New technology from every major electronics company but Apple is on display; even though the show is four days long, there is no way to see everything.

CES is not open to the public. You must have an industry credential to register. I was able to register as a member of the media and had free access to the show.

The first challenge was getting to the show and setting up. It was a bit of a trick getting around the airport trying to balance the stove on my bag full of tools and spare parts. I was fortunate that my Uber drivers had the trunk space to accommodate it all. Unfortunately, my media credentials did not allow me into the exhibitor area to set up before the show started, so I had to wait until the show opened to get to the booth and do that.

Inirv was set up in Eureka Village, the exhibit hall for start-up companies and universities. It is one of the most exciting parts of the show, filled with 10-by-10-foot booths boasting new products and the most outside-the-box ideas.

Eureka Village has a great vibe. Because all of the companies in that area are small and looking to grow fast, there is a lot of nervous, positive energy in the room. Everyone is looking to make a big splash or make the right connection for a big purchase order or partnership.

## Fast friendships

The Inirv booth was in the Smart Home section, at the end of a line of mostly French companies. Our neighbors were 42 Tea, a French smart tea company, and Blue Frog Robotics, a French robot company with a companion robot named Buddy. During the four days, we became friends in the same way you do with someone you sit next to on a long flight. You may have a nice conversation or borrow their pen, but you know you are likely to never meet again.

Exhibiting can become monotonous; it is a lot of standing and talking. During show hours, there is a steady flow of people coming to the booth and asking questions. After the first few hours, you get your pitch lean and precise and hear yourself saying the same thing over and over. Having a fresh bottle of water handy is essential to keep your throat from drying out.

Many visitors are tire kickers who just want a free pen, but others are industry insiders who may be great contacts. Exhibitors rarely get to leave their booths because you never know when the right connection will stop by.





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Clockwise from above left: Nightlife should be off-limits for serious exhibitors. Akshita Iyer of Inirv works at her booth during the Consumer Electronics Show (CES), the world's largest consumer tech show. A representative from Belgian start-up Kanopy25 discusses his automatic plant-watering device.

There are food courts in the exhibit hall, so there is no need to leave—but you don't get to see the sun, either. Fortunately, there were four of us supporting the product, so we each had time to get away to see the show.

There are also pitches and meetings to attend. The inventors at my booth went to an open call for the TV show "Shark Tank" while I manned the booth. They also met with a retailer and a major manufacturer who were interested in their smart stove device. These pitches and meetings are a great way to get quality face time with potential partners, and can be more valuable than the hours spent at the booth.

There was little time to enjoy the sights. One of the days, the prototype broke down and I had to drag it and all of my tools back to my hotel in Henderson. I stopped by a slot machine on the way out of the Venetian Hotel, lost \$5 in about 60 seconds, and gave up on gambling for the rest of the trip. Another night, my phone was acting up and I spent three hours in the glamorous Apple store inside Caesar's Palace. There were parties and plenty of nightlife for show goers, but

as an exhibitor you need to be sharp and avoid temptation. At the end of each day, the hall stays open for a few hours for exhibitors. Some people bust out a beer or some wine to recap the day—sort of like fishermen gathering at the pier at the end of a long day at sea. It is a peaceful moment to talk to peers and see whether anyone got any good contacts.

The show lasted through Sunday, but I had an early flight on that morning and missed the last day. The Inirv was well received by show goers and had a great opening week on Kickstarter. It was worth all of the effort. 🍷

**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/](http://blog.edisonnation.com/category/prototyping/).



# Your Own Best Friend — or Worst Enemy?



A SYSTEMATIC APPROACH CAN DETERMINE YOUR CREATIVE PATH **BY LAWRENCE J. UDELL**

**N**ow that I have your curiosity aroused, consider the plight of the American inventor. Unfortunately, for this article we have to ignore the Edisons and those special people who changed the course of history in positive ways and became extremely wealthy in pursuit of their brainchild.

I am focusing on you, the reader—the creative individual who has a dream and visualizes the wealth and fame that can be derived from a successful invention. However, it is not the invention that becomes a big success; it is the transition of the invention and concept that is professionally developed into the product. Only then—after untold hours, days, months and sometimes years of frustration, anguish and loss of money, friends and sometimes family—does it attain success or failure.

During the six decades I have been working with and assisting and mentoring inventors, I have seen the creation take over its creator. In two cases, it actually broke up a family, with children suffering while their father or mother pursued a dream. The inventor became his or her own worst enemy.

## Start this self-exam

So, you as reader/inventor has total control over becoming your own best friend or your own worst enemy. Let's explore this further, starting with a self-examination test that will hopefully provide you with a favorable path to your creative future.

On a writing pad, not on the computer, start a list of what you believe are your greatest strengths. List all of the qualities that you recognize as potentially valuable. Look at all of your past accomplishments and list them on a separate sheet. Now, very seriously consider: What are your greatest weaknesses? Start another page for this. They could be everything from not having any experience in a subject that interests you, to a lack of vocabulary to express yourself verbally or in writing. Perhaps it's taking care of your checkbook balance, or maintaining a list of your personal friends and contacts, or not working at the job you really want.

By now, you should have at least four or five pages. Now, start a new page. Sit quietly and visualize where you are and what you will be doing five years from now. Seriously project your mind into a future vision of happiness—home, family, work, etc. What can you see that now becomes a potentially future plan for success? Who is part of that vision, and why? Have your creative abilities transformed an idea or invention into a successful product?

OK, so if you now go back to the previous pages of everything you wrote, start on a new sheet of paper the vision that you want to turn into reality. This is an exercise to focus your thinking, as well as to make the dream happen. Go back to the page where you described your weaknesses. With a different colored pen, now list the people you know who may have the strengths to balance your weaknesses. You are now beginning to put together the team that hopefully will launch your new future.

## Research and protect

One of the most important ingredients in creating your new venture, and hopefully your new life, is to take the time to do your research. That includes searching for similar products by not only exploring the internet but by diligently going through the uspto.gov files of all of the patented inventions. Once you have concluded there is nothing similar to your invention, start researching the market, its size, what companies produce the products, why yours is better, etc.

Then, start to very seriously consider protection. Most of the answers to your questions can be found on the USPTO website. You can make an appointment with a patent attorney who will provide you at least a half-hour of free time. Protecting your idea will be critical if you decide to consider licensing instead of going into business. For all kinds of information on the subject, check out [Iesusacanada.org](http://Iesusacanada.org), a worldwide organization of IP attorneys and thousands of corporations, universities, research centers, etc. If you want a lot of free information about inventing, go to [CaliforniaInventionCenter.org](http://CaliforniaInventionCenter.org).

The above systematic approach to successful inventing does work. There are a lot more required ingredients, but space limits my ability to further elaborate. Send me an email: [larryjudell@gmail.com](mailto:larryjudell@gmail.com).

## From Your Idea to Product to Market

### BUSINESS START-UP CONFERENCE

New Mexico Tech is hosting the second annual Inventors and Entrepreneurs Workshop, April 7-8 on the university campus. Presenters will include Gordon Moore, president of Lectorsonics, who received a science/technology Oscar at this year's Academy Awards for the company's wireless microphone used in the movie "La La Land" and other films; William Seidel, CEO of America Invents; Bill Reichert, co-founder of Garage Technology Ventures; Norman Smith, VizKinect CEO who has founded nine successful start-ups in the past 30 years, and more. Topics will include picking and evaluating a successful invention idea, key steps in going from idea to initial prototype, and choices for funding your invention. The Kauffman Foundation contributed \$10,000 for the three top business plans presented, and the Lemelson-MIT Foundation is also a sponsor.

Hours are noon to 9:30 p.m. Friday, and 9 a.m. to 3:30 p.m. Saturday. Registration is \$95 (\$25 for students with IDs, \$45 for seniors 65 and older, military veterans and special needs). It includes a cocktail reception, barbecue dinner, continental breakfast, box lunch, break refreshments and all types of life-changing information.

Details: <http://management.nmt.edu/event>. Call Larry Udell (510-914-8449) or Peter Anselmo (575-835-5438), or email [ludell@nmt.edu](mailto:ludell@nmt.edu) or [anselmo@nmt.edu](mailto:anselmo@nmt.edu).

# Know Your Cost Breakdowns

KEEP MANUFACTURING EXPENSES LOWER THAN 25% **BY DON DEBELAK**

**O**ne of the most important planning aspects for inventors is determining costs associated with manufacturing, marketing and selling your product.

Inventors often don't realize that they need their product's manufacturing costs to be only 20 percent to 25 percent of their projected retail sales price if they hope to make money. See this chart for a typical \$100 retail sale:

Category	Cost	Comments
Retailer discount	\$50	This could go up to \$60 for a major customer
Manufacturing cost	\$25	Includes packaging and shipping
Sales cost	\$6	Sales cost, salespeople, rep commissions and order entry
Marketing costs	\$6	Ads, trade show booths, promotional literature, websites, social media promotion
Product support	\$3	Regulatory approvals and warranty returns
Administration	\$5	Interest charges, accounting, executive salaries, etc.
Profit	\$5	Ouch! That's not much, but 5 percent to 10 percent is a typical inventor's profit

The problem most inventors have before spending large amounts of money is not knowing how to estimate what their product will cost in large production. Often, they only have quotes for prototypes and small production runs, which can be very high.

Inventors often don't know the impact of tooling costs, either, and how those costs should be incorporated into their final product cost. To get a better understanding of their manufacturing, I recommend inventors follow these five steps to see whether their product can make money.



1. Find two to three products that you feel will have very similar manufacturing costs to your product. If you look at the price of that product and divide it by five, you will probably be somewhat close to its manufacturing costs. That is a good starting point for the cost of your product.
2. Take the products to the local branch of SCORE (Service Corps of Retired Executives; [score.org](http://score.org)). I have found that most branches have several people with manufacturing experience, or connections that can help guide you while you figure out costs. Have the adviser explain whether there are any major differences between your product and the ones you have chosen that could result in a higher or lower price for your product.
3. If you can't find a SCORE adviser, take the products, along with your idea, to two to three manufacturers who manufacture your type of product. Ask them if they feel the cost of your product will be similar to theirs. Again, ask for differences that would make the product more or less expensive than yours.
4. Estimated the impact of tooling costs. One component of product costs that can throw you off is that tooling costs are amortized over time and put in the product costs. So if tooling costs for a product are \$50,000 and it will make 1 million units, the manufacturer will add about 20 cents to each product produced. You need input from manufacturers and your SCORE contact about getting the most cost-effective mold size.
5. Multiply your predicted production cost by five and then compare it to what you feel is the perceived value of your product. If your perceived value is about the same, or higher, after doing this, you are in great shape to make money on your invention. If not, you may need to go back and redesign your product so it is cheaper to make.

These may seem like torturous steps. But far too often, inventors with strong, saleable products continue on the invention path—spending money at every step—only to end up with a product they can never make money on because production costs are too high for the product's perceived value. The time to discover this is early, when you have time to make corrections by adding features or redesigning your product to cut costs. 🛠️

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# 'Pop' Goes His American Dream

EVEN WITH A PATENT, WATER BALLOON INVENTION

HURT BY LOW PTAB STANDARDS **BY PAUL MORINVILLE**

**J**osh Malone has eight kids. On hot Texas days, he joins them for a water balloon fight to cool off.

Dad is normally in the rear with the gear. He is the family reloader, filling and tying water balloons to supply his kids with the ammunition necessary to keep the backyard action going. It was during one of these skirmishes that Malone figured he could replace himself if he created a harmless weapon of mass destruction. He thought of several ways and then, like so many inventors before him, obsessively tinkered until he finally invented one that worked. It screws onto a garden hose and has dozens of long tubes. Attached to the end of each tube is a self-sealing balloon. You just turn on the hose and when the balloons are substantially filled, you shake them, they fall off and the kids launch another attack. Leonardo da Vinci would be proud.

He named it Bunch O Balloons. Malone knew then that he had a winner, and building a company based on his invention became his American Dream. He filed a provisional patent application in February 2014. Things

went quickly at the United States Patent and Trademark Office; his first patent was issued about 18 months after the application was filed.

Patenting proved he was the inventor and had an exclusive right to his invention. More important, the patent could be collateralized to attract investment to build his start-up.

## A consumer sensation. Then...

Investors look at upside potential and downside risks. On the upside, a patent's exclusive right meant that if Bunch O Balloons took off, Malone would be able to keep competition at bay long enough to establish his start-up and return the investment. On the downside, a large company with deep pockets, existing customers and solid distribution capabilities could steal the invention and massively commercialize it—thus flooding the market and killing his start-up. But patents mitigated this risk. In the worst case, Malone's investors could take control of the patent and return their investment by defending it against the same infringers who killed the company.



He manufactured an initial batch of products and ran a crowdfunding campaign on Kickstarter. This campaign was a hit, generating 598 orders on Day 1 and bringing in nearly \$1 million overall. Within a couple of days it triggered national media coverage in *Sports Illustrated* and *Time*, and on “Good Morning America” and “Today.” Bunch O Balloons went viral, with 9.6 million YouTube views. This would mean everything to his growing family.

Orders kept pouring in during the next few months. Malone was contacted by several ethical manufacturers seeking to license his invention. With business picking up fast, he partnered with a company called ZURU, which is now marketing, manufacturing and selling Bunch O Balloons. He achieved the American Dream. But that means nothing under the current American patent system.

Kickstarter is regularly watched by potential investors, customers and ethical businesses. But there are others. Infringers also monitor crowdfunding sites and other locales where a potential new product draws heavy interest. Bunch O Balloons accused Telebrands of knocking off the product a few months after Malone launched his Kickstarter campaign.

### Deck is stacked the wrong way

Today, the U.S. patent system favors infringers. In fact, it is a CEO's fiduciary duty to steal patented technologies, massively commercialize them and then never talk to the inventor unless the inventor sues. In the vast majority of cases inventors cannot access the courts because contingent fee attorneys and investors have largely left the business, so in most cases the infringer gets to keep the invention free of charge.

Much has been written about how, in the America Invents Act of 2011, Congress stacked the deck against inventors by creating the Patent Trial and Appeal Board in the USPTO. The PTAB turned property rights upside down by immediately invalidating the property right already granted by the USPTO and then forcing the inventor to reprove the validity of the same property right.

Under the leadership of Michelle Lee, the deck was stacked even further by setting PTAB evaluation standards much lower than the court. Lee's decision to set these low standards weaponized the PTAB for the mass destruction of patents—and a weapon of mass destruction they certainly are. The vast majority of patents evaluated by the PTAB are either invalidated or neutered. Big infringing corporations know this.

So when Malone sued Telebrands for patent infringement, the company responded by filing a PTAB procedure called post-grant review. The court did not stay the case, pending the outcome of the PGR, and ordered a preliminary injunction against Telebrands. Telebrands appealed the preliminary injunction to the United States Court of Appeals for the Federal Circuit.

### Patent invalidated

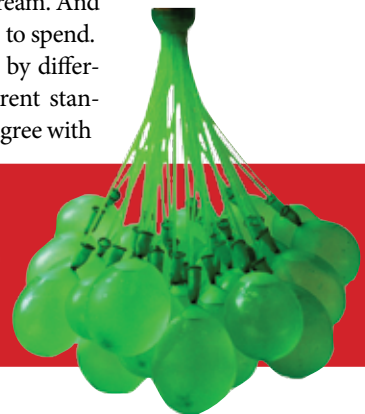
During the pendency of the appeal, the PTAB rendered its verdict. Malone's patent was invalidated as indefinite under Section 112. The claims state that the balloon must be “substantially filled,” which, according to the PTAB, is not defined: “... the Specification does not supply an objective standard for measuring the scope of the term ‘filled’ or ‘substantially filled.’”

But how else can you write the claims? You could use grams of water if a balloon was a solid structure, or perhaps if all balloons were exactly the same. But manufacturing processes that make balloons are not accurate processes. The thickness of the balloon's wall varies greatly from balloon to balloon and even in the same balloon. Yet Michelle Lee's PTAB invalidated the patent that Lee's USPTO had just issued. (Five other patents have been issued to Malone; one even refers to this very PTAB proceeding as prior art, yet it was still granted by the examiner. I kid you not.)

The case is not over. Moreover, two additional PGRs have been filed against Malone on other patents, adding \$1 million to his costs. Already, he has spent multiples of what he earned in his Kickstarter campaign and probably everything he's made in this entire American Dream. And he's got years left of litigation and millions more to spend.

Patents can be invalidated in multiple ways by different branches of government and under different standards. Often these branches and standards disagree with

**Josh Malone achieved the American Dream. But that means nothing under the current American patent system.**



each other, as is the case here. Today, nobody can know if a patent is valid until the United States Court of Appeals for the Federal Circuit or the Supreme Court says it is.

But this is the world inventors live in. If you invent something marketable, you will pay for it with years in court and millions of dollars. Nobody respects patent rights. They don't have to. It is better to steal them and litigate the inventor into oblivion. Josh Malone is fortunate to have a partner willing to fight with him and accept considerable financial burden. But most inventors cannot even open the courthouse doors. 🚪

**Paul Morinville** is managing director of US Inventor, Inc., an inventor organization working in Washington, D.C., and around the United States to advocate for strong patent protection for inventors and startups. He is an independent inventor with dozens of patents and pending patent applications in enterprise software.





# Hatch: Patent Venue Reform Likely

SPECULATION GROWS IN  
SUPREME COURT'S PENDING  
RULING ON *TC HEARTLAND*

BY GENE QUINN

**W**hen Sen. Orrin Hatch (R-Utah) recently rolled out his innovation agenda for the 115th Congress during a special event at the United States Capitol, he said there is a good chance that patent litigation reform will happen this year.

The chairman of the Senate Republican High-Tech Task Force characterized patent litigation as a tremendously thorny issue: “I believe there’s one area where we can see real progress this year: venue. Abusive litigants have exploited a hole in the law to direct a disproportionate number of suits to plaintiff-friendly forums, and to one such forum in particular.

“The Supreme Court is currently examining the issue, so we won’t have a full view of the landscape until after the court rules. But no matter what the court does, we’re likely going to need follow-on legislation to prevent future forum-shopping and to ensure that litigants have a meaningful connection to the site of the suit. I intend to take a leading role on this critical issue.”

## Which statute(s) in play?

The subject of venue is highlighted by *TC Heartland LLC v. Kraft Food Brands Group LLC*. In that case, the Supreme Court has agreed to decide whether U.S. Code Title 28, Section 1400(b) is the exclusive provision governing venue in patent infringement actions. Resolving this question could have very large ramifications on where patent infringement cases can be brought by patent owners.

The statutes in question when the Supreme Court decides

*TC Heartland* will be Sections 1400(b) and 1391(c). Pursuant to 1400(b), a “patent infringement may be brought in the judicial district where the defendant resides, or where the defendant has committed acts of infringement and has a regular and established place of business.” Pursuant to 1391(c), a corporation is deemed to be a resident of “any judicial district in which such defendant is subject to the court’s personal jurisdiction...”

In *Fourco Glass Co. v. Transmirra Products Corp.* (1957), the Supreme Court held that 1400(b) is not to be supplemented by 1391(c) and that 1400(b) “is the sole and exclusive provision controlling venue in patent infringement actions...” While that might seem to end the inquiry on its face, the U.S. Court of Appeals for Federal Circuit has for the past 25 years ignored the Supreme Court ruling in *Fourco Glass* based on the belief that 1988 amendments by Congress “rendered the statutory definition of corporate residence (found in Section 1391) applicable to patent cases.” Thus, it is the belief of the federal circuit that Congress used its authority to overrule the Supreme Court’s ruling in *Fourco Glass*.

## Will federal circuit be overruled?

Bart Eppenauer, former chief patent counsel for Microsoft and current managing partner of the Seattle office of Shook, Hardy & Bacon, disagrees with the federal circuit that the 1988 amendments did overrule *Fourco Glass*. He recently told a webinar audience that he feels the Supreme Court took this case to overrule the federal circuit’s interpretation of 1391(c).

PHOTO BY GAGE SKIDMORE VIA FLICKR



Hans Sauer, who is deputy general counsel for the Biotechnology Innovation Organization and spoke on the same webinar, said that the way business is conducted today many companies are incorporated in jurisdictions where they do not really do business or have any presence. So, he said, it is questionable whether a return to 1400(b) as the only jurisdictional statute would make sense in a modern world.

It is hard to argue with Eppenauer when he predicts the Supreme Court will overrule the federal circuit. Though the Supreme Court does from time to time affirm the federal circuit, in the vast majority of cases either the judgment or legal rulings are overruled or at least substantially alerted.

Equally clear, however, is that if the Supreme Court were to again rule that Section 1400(b) is the only venue statute applicable to patent infringement actions, that would go much farther than any proposed venue reform legislation—and specifically much farther than the venue reform bill submitted by Senator Jeff Flake (R-Ariz.) during the 114th Congress. Eppenauer, Sauer and I all agreed during the aforementioned webinar that a push for venue reform in the wake of the Supreme Court's decision in

## Resolving the question of venue in *TC Heartland LLC v. Kraft Food Brands Group LLC* could have very large ramifications on where patent infringement cases can be brought by patent owners.

*TC Heartland* seems inevitable regardless of how SCOTUS rules.

If the Supreme Court were to agree with the federal circuit, the call for venue reform from the tech sector would become deafening. Although Eppenauer said a ruling from the Supreme Court overruling the federal circuit and reinstating 1400(b) as the only venue statute would be loudly celebrated by virtually all technology companies, he also agreed that such a ruling would be harder to accept for many patent owners. So if the Supreme Court reverts to *Fourco Glass*, look for many patent owners with portfolios and litigation problems of a different character from the tech sector to push for a softening, which would require legislation.

### Litigation venue shift looms

Either way, it seems the days are numbered for the Eastern District of Texas as the patent-centric court of choice for many plaintiffs. With 35 percent to 40 percent of filings made there, the face of patent litigation could be changing quickly. Thanks to so many companies being incorporated in Delaware, the District of Delaware may become the favorite venue for patent owners in the not-too-distant future.

If things play out the way they seem to be heading, will companies (particularly start-up innovation companies) consider incorporating and limiting their operations to those areas where district courts have shown the most hostility to patent owners? Keep following *TC Heartland*, because it could have profound impacts on business decisions and the future of patent reform legislation. ☐



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# TTI Ruling Underscores a Broken PTAB

ARBITRARY RULINGS ARE THE BOARD'S TRADEMARK

BY GENE QUINN

**I**f doubt remained that the Patent Trial and Appeal Board is a thoroughly broken tribunal incapable of redemption or fixing, that doubt has to be erased after a recent ruling by the United States Patent and Trademark Office's entity.

The PTAB has a history of harassing Trading Technology International, which owns patents on various graphical user interfaces. These patents have been subject to repeated covered business method (CBM) challenges at the PTAB despite the fact that graphic user interfaces are not business methods, and they present a technological solution to a technological problem. These same TTI innovations have been patented in Europe, where there is a prohibition against business methods; they were patented because they represent a technological innovation.

According to Section 18 of the America Invents Act, the USPTO may institute a CBM patent challenge to review method claims for performing data processing or other operations used in the practice, administration, or management of a financial product or service. Specifically excluded from the definition of CBM patents are those that relate to technological inventions. To determine whether a patent is for a technological invention, the PTAB is supposed to consider whether the claimed subject matter recites a technological feature that is novel and unobvious over the prior art, and solves a technical problem using a technical solution.

The legislative history confirms that the entire point of CBM review was to provide an extraordinary post-grant review proceeding for business method patents, because Congress believed the USPTO was ill equipped to examine this type of patent application in the late 1990s and early 2000s. Every example of a CBM provided in the legislative history claims at some level a business method or data processing technique. Moreover, the legislative history specifically states in unequivocal terms that patents claiming graphic user interfaces for trading, as opposed to patents claiming a trading strategy, are not CBMs. In particular, the bill's sponsor, Sen. Chuck Schumer (D-N.Y.), agreed with Sen. Dick Durbin (D-Ill.) that a patent claiming "software tools and

graphical user interfaces that have been widely commercialized and used within the electronic trading industry to implement trading and asset allocation strategies" was not a CBM.

Nonetheless, multiple TTI graphical user interface patents were instituted for CBM review by the PTAB. USPTO Director Michelle Lee has been asked to use her power—a power the patent office specifically and correctly acknowledges was given to the office in the America Invents Act—to put an end to this harassment at the hands of multiple petitioners and a complicit PTAB.

She has refused. In fact, Lee has not stepped in to exercise her power to save patent owners from harassment, despite the fact that certain patent owners find themselves hauled into multiple post-grant challenges for each patent they own.

## Logic quickly disappears

In any event, on January 18 of this year the United States Court of Appeals for the Federal Circuit determined that the claims of two TTI graphical user interface patents—U.S. Patents No. 6,772,132 ("the '132 patent") and No. 6,766,304 ("the '304 patent")—consisted of patent-eligible subject matter. The PTAB had previously instituted a CBM review of the '304 patent. To the credit of the majority of the PTAB panel considering the '304 patent in CBM2015-00161, once the federal circuit issued its decision the CBM proceeding against the '304 patent was terminated. That, however, is the end of where logic prevails.

One administrative patent judge, Meredith Petravick, dissented. She said it was inappropriate for the PTAB to terminate the '304 patent CBM because the parties were different when compared to the federal circuit case. Petravick said that the review should be limited to the record of the '304 patent and not consider extraneous, out-of-record matters such as a federal circuit determination that the very same claims are, in fact, patent eligible.

According to logic employed by Judge Petravick (if you can call it that), a ruling as a matter of law that claims are patent eligible is of no consequence, and patent owners must obtain a



favorable patent eligibility ruling against each challenger in every case or challenge. Absurd! Furthermore, the PTAB is an administrative tribunal subordinate to the federal circuit.

That is not the end of the story. On the same day the PTAB terminated the CBM on the '304 patent, the same panel of PTAB judges issued a final written decision finding the claims of another TTI graphical user interface patent to be patent ineligible. In CBM 2015-00179, which challenged the claims of U.S. Patent No. 7,533,056, Administrative Patent Judges Petravick, Sally Medley and Jeremy Plenzler all ruled that claims that are substantively indistinguishable from those of the '304 patent are all patent ineligible.

The PTAB determined that the '056 patent claims an abstract idea, but both the United States District Court for the Northern District of Illinois and the federal circuit determined that the '304 patent claims did not claim an abstract idea.

The PTAB determined that the '056 patent claims "do not add significantly more to the abstract idea or fundamental economic prac-

**In a challenge to the claims of patent '056, three judges ruled that claims that are substantively indistinguishable from those of the '304 patent are all patent ineligible. Yet the claims of the '304 patent were patent eligible.**

tice." Both the United States District Court for the Northern District of Illinois and the federal circuit determined that even assuming the claims covered an abstract idea, the '304 patent claims did recite an inventive concept that added significantly more.

How is it possible that the claims of the '304 patent are patent eligible but the claims of the '056 patent are patent ineligible? It is this kind of arbitrary and capricious ruling that is becoming the trademark of the PTAB, which does not like patents—so they see everything as abstract and not contributing substantially more.

### **Time for an alternative?**

The sole purpose for the creation of the PTAB was to provide a lower-cost alternative to challenge low-quality patents and get rid of patent trolls. But the PTAB has failed to deliver a solution. What's worse are the head-scratching decisions that seem to be made by those without any familiarity with law or process.

Given the lack of due process, arbitrary and capricious rulings, refusing to consider timely submitted evidence, fundamentally misapplying the law of obviousness, determining that an MRI machine is an abstract idea, and its ignoring the law, it is time to seriously consider whether the only solution available is to disband the PTAB and search for a different answer. ☛

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## They sang

Yeah, she's a sad tomato  
She's three miles of bad road  
She's her own invention (she's her own invention)  
That gets me in the throat  
—"Crush With Eyeliner," REM

He sits in your room, his tomb with a fist full of tacks  
Preoccupied with his vengeance  
Cursin' the dead that can't answer him back  
You know that he has no intentions  
Of looking your way, unless it's to say  
That he needs you to test his inventions  
—"Can You Please Crawl Out Your Window?," Bob Dylan

## Wunderkinds

At Wesminster Schools of Augusta, Georgia, they've been inventing before it was cool. This year's Invention Convention, which goes back more than two decades, yielded creations from 37 fourth-graders. The goal is to address real-world problems: **Anabelle Wilkes** and her father came up with "K 9 Lives," a pet food that can be eaten by both dogs and cats so that neither gets sick when eating the other's food. **Patrick Andrew Joiner's** "Wolverine Gloves 5,000" helps people carry large quantities of leaves or pine straw. Teacher Virginia Shelley told the Augusta Chronicle, "There's no doubt this is the highlight of their year."



## What IS that?

The product description on Amazon.com at least tries to think along with us: "OK, this poses the obvious question, 'Why would anyone want to wear pants on their hands?'" Maybe it's because the operative word here is "underpants," not "pants." Anyway, the product description then answers its question: "Because it's cool. Well, kooky. OK, weird." We'll give them that, except for maybe the "cool" part. Handerpants are made of 95 percent breathable cotton and contain 5 percent spandex for stretchability.

# 1,782

A score tallied on a single Scrabble play by (serious!) competition player **Benjamin Woo**. He played the word oxyphenbutazone across the top of the board, hitting three triple word score squares while making seven crosswords below. Architect Alfred Mosher Butts created the game in 1938, initially calling it Lexiko and later Criss Cross Words. National Scrabble Day is April 13, Butts' birthday in 1899.

## WHAT DO YOU KNOW?

**1 True or false:** A copy of *Inventors Digest* appeared in a scene from the movie "Little Fockers," starring Ben Stiller.

**2** Pez, first marketed as a compressed peppermint sweet by Eduard Haas III in 1927, was originally intended for what purpose?

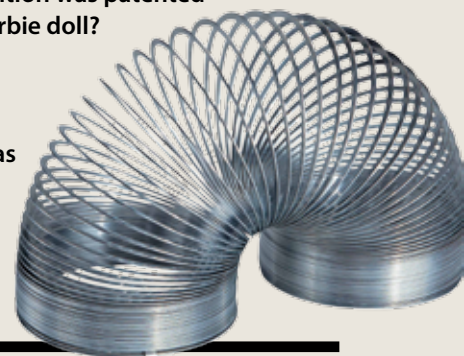
- A) A headache remedy B) An adult breath mint  
C) A children's candy D) An alternative to smoking  
E) B and D

**3 True or false:** Colorforms, the classic children's toy, originated when creators Harry and Patricia Kislevitz cut out colorful vinyl shapes and stuck them on their bathroom walls.

**4** Which classic toy invention was patented first—Slinky, or the Barbie doll?

**5** The board game Life, originally called The Checkered Game of Life, was created in:

- A) 1860 B) 1911  
C) 1929 D) 1946



### ANSWERS

1) False. The magazine appeared in another Stiller movie, "Night at the Museum 2: Battle of the Smithsonian." 2) E. 3) True. 4) Slinky was patented in 1947, Barbie in 1961. 5) A.



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