

THE  TIMES

# Eureka

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Eye of the beholder

THE BEAUTY ISSUE



Ask Trevor Baylis, the man behind the wind-up radio and electric shoes, why these are dark days for inventors and he will bombard you with answers. Television programmes such as *Dragons' Den* are disrespectful, the theft of intellectual property is punished with a slap on the wrist and the Government is doing nothing to incentivise people with good ideas.

"We have some of the best inventions and inventors in the world but unless we support them, this nation is going to go down the drain," he says.

The main obstacle to patenting in Britain is the financial burden of protecting an idea. UK patent attorneys charge at least £2,500 for establishing and filing a patent. In the past 20 years, there has been a gradual decline in patent applications. "If you look through history, most British inventors died in poverty," Baylis says. "I didn't make a fortune out of my radio because I couldn't find anyone in Britain to listen. I was told it would be too expensive, yet I made the damn thing in my garden shed."

Although Baylis hates the term "sheddy", it does reflect the notion that anyone can have a light bulb moment. In countries such as China, France and Germany, cheaper "second-tier" protection enables people to safeguard such ideas.

In Britain, few do so. Even Baylis has been stung. He invented products, called Orange Aids, to help people with disabilities, but couldn't afford to have them patented and "got ripped off like a turkey". That is why he set up Trevor Baylis Brands. Patent attorneys check if an idea has been patented. If not, designers and lawyers take clients through the process.

Baylis is keen to emphasise that no idea is too stupid. "OK, we get some whirly ones, but we never know when we might get a nugget of gold in the tray."

Another organisation, Innovate Product Design, helped two of the inventors featured here. The company's managing director, Alastair Swanwick, says: "Inventors should not be put off by the fact they do not have the technical skill or vast funds."

This is the crux of the message. As Baylis says: "It's not about money, ironically. Have fun. Have a life. Remember this punchline of mine: 'Art is pleasure, invention is treasure.'"

[www.trevorbaylisbrands.com](http://www.trevorbaylisbrands.com)  
[www.innovate-design.co.uk](http://www.innovate-design.co.uk)

# A shedload of ideas

Tales of everyday invention

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## David Elliott

Having a blast with hot air

David Elliott spends a lot of his time tinkering in his garden shed. "It's about 10ft by 8ft and total chaos," he says. "But I use it for everything, from my little inventions down to doing my garden seedlings. Everything happens in there!"

Elliott used to work in fire and flood restoration, pulling up carpets and underlay, deploying air movers and humidifiers. "What you're not supposed to do," he says, "is put plastic on something you want to dry." But the path of wrong thinking led him to create the Direct Air Dryer, a large, inflatable plastic contraption with air-delivering holes in its base that is laid out on wet floors.

"I tried several versions," he says. "First, sheets of soundproofing board with holes through which you pumped air, but it wasn't very portable. It had to have a flexible membrane of some sort, so I thought of a Lilo with Velcro openings around the edge."

He chanced upon a two-man enterprise that made anything from lorry curtains to tarpaulins, and was able to mock up a prototype. He then spent hours on his dining room floor, punching thousands of holes in the plastic base. The first model dried his living room carpet in an hour instead of four or five.

After eight years of tweaking he has a product that, depending on the level of water and the type of surface, can reduce drying times on flooded floors by at least 50 per cent.

"I'm not one of those high-flying academics but I can get my head round anything practical," he says. After a car accident, he had to give up the physical side of restoration work. "It left me with several injuries," he says. "But the brain still works and it seems to have gone into overdrive. My mind doesn't stop now."

Elliott has developed a carpentry clamp extension and is now working on a new type of electrical socket. He attends a monthly forum for inventors, where "people from all walks of life bounce ideas off each other", and says he is motivated by something that unites them all: "A yen to improve things."

[www.directairdryers.co.uk](http://www.directairdryers.co.uk)





## Kate Castle

Bags of talent gone to waste

Have you ever been stuck in a tent in the middle of the night, desperate to go to the loo? Kate Castle had, and the prospect of walking across a cold and dark campsite to the toilet block was the final straw.

"There isn't really a portable toilet on the market that I would consider taking away with me that isn't really bulky and cumbersome to empty," she says. So Castle came up with the BoginaBag — a portable loo you can fold up and sling over your shoulder and which, most importantly, doesn't need to be emptied.

The BoginaBag looks like a tall fishing stool with a hole in the middle; its website instructs its user to "insert one of our specially designed degradable bags, relax and relieve yourself".

Trevor Baylis might not approve, but Castle's invention has been given a very recognisable boost — a £50,000 investment from Theo Paphitis, one of the inhabitants of the *Dragons' Den*. Castle appeared on the show this year and received offers from three of the Dragons.

"I felt shell-shocked," she said. "You're in there for an hour and 45 minutes and it's a huge build-up. I walked out thinking, 'What just happened?'"

Of her invention, Castle says: "The process for me has been about combining and tweaking elements to create something new. The fishing stool has been adapted and the disposable pads it uses are a more absorbent version of a sanitary towel or nappy."

The BoginaBag accompanies Castle and her two children to campsites, beaches and picnics, and stays in the car boot for emergencies. With a background in retail and marketing, she is comfortable with the business side of inventing, including negotiations with factories in China.

"My parents brought me up to take risks," she says. "If it didn't work out, I was willing to accept that and move on. You're either the kind of person who's happy to do that or you're not."

What has surprised her, however, is how much inventing occupies her mind (among other things, she is currently working on a privacy poncho). "There are always ways of developing things and I keep on thinking of new things. Once inventing bites you there don't seem to be any boundaries."

[www.boginabag.com](http://www.boginabag.com)

## ACCIDENTAL HEROES

**CONSTANTIN FAHLBERG** is the person coffee drinkers have to thank for the invention of Saccharin. In 1879, Fahlberg, a chemist experimenting with a coal-tar substance, noticed that his food tasted sweet. He traced the cause to chemicals on his hands and clothes, leading him to discover an alternative to sugar.

**DR PERCY SPENCER** patented more than 120 inventions, but the product for which he is famous was discovered by accident. While standing near a radar component called a magnetron, a candy bar in his pocket melted. He dangled a popcorn seed in front of the magnetron; the seed exploded. Two years later, Spencer developed the microwave oven.

**ROBERT CHESEBROUGH** went to Pennsylvania in 1859 to dig for oil, but he was to make his fortune with another petroleum extract. He observed that "rod wax", a gooey substance that caused drills to seize up, also healed labourers' cuts and wounds. He subsequently developed the jelly into a marketable product: Vaseline.

**DR WILSON GREATBATCH** was trying to create a device to record the sound of a heartbeat when he installed, by accident, a strong resistor. When connected to a power source, it mimicked the rhythm of a heart. In 1960, he implanted the device in a human, creating the first pacemaker.

**17TH-CENTURY BRITONS'** taste for French wine is probably responsible for the invention of champagne. To ensure a steady supply of French wines, barrels were shipped to England before they had fermented. On arrival, they warmed up and began a second fermentation, making them carbonated. Brits loved it. Joe Miller & Tim Fisher



## Mark Collins

Wanted: slippery customers

Mark Collins has invented a DIY tattoo-removal kit, marble stain remover and safe transportation methods for highly corrosive chemicals. Now, he is waging war on slippery floors.

The Slip Guardian is a small, static machine that figures out the probability of someone falling over on any given surface. It then tells cleaners what sort of chemicals are needed to make the surface safe.

A chemist, Collins has been inventing for 25 years, though he has been thinking like an inventor for longer. "When I was 10," he says, "I designed a car that could hover."

He treats the generation of ideas with reverence, rising at 4am to brainstorm. "It's a peaceful and beautiful time. That's when I come up with most of my ideas — about four or five a day. If it's a particularly good one the very first thing I'll do is contact a patent agent, to see if it's feasible."

For Collins, inventing is a problem-solving

pursuit. "It's extremely important to go through the tinkering process," he says, "to get to grips with what is required. A 3-D model gets juices flowing more than just looking at a drawing. The trick is to be able to pick it up and see it."

His large workshop is flanked by an office, which he uses for chasing patents and finding parts and manufacturers. He tries to steer clear of marketing. "I guess I'm a bit of a loner," he says. "I would be unbearable to work with because I'm a perfectionist. But I'm also an optimist. I don't worry too much about money, I'm prepared to put everything on the line if I think the idea is worth it, fortunately with the backing of my wife."

Collins thinks that he knows when he has mined a good idea, an objective truth in need of an efficient explanation. But the communication of an idea can be as tricky as its conception. "If that idea fails," he says, "it's because I haven't explained it properly, rather than the idea being insufficient in itself."

What else is he uncompromising on? "The marketplace for any invention has to be more than £100 million, otherwise it won't be worth the hard work. I also try to go on holiday a lot." [www.surfacecontrol.com](http://www.surfacecontrol.com)

## THE DYSON 5

*These are the attributes I look for in my engineers, writes James Dyson. They are as applicable within the four walls of your shed as they are in our research and development facilities in rural Wiltshire*

**FRUSTRATION** Inspiration won't come from staring at a blank page. It's often frustration that provides the spark for a good idea. **FAILURE** You'll need to get it wrong (many times) before you get it right. Create multiple solutions to the problem you have found; your first certainly won't be your best.

**PERFECTIONISM** Is everything. **PERSEVERANCE** I created more than 5,000 prototypes before the first Dyson went into production. **PROTECTION** Patent your ideas. Your intellectual property is your most important asset, and others will want it.



## Delia Strand

Charging ahead

When asked what she thinks made her want to invent, Delia Strand puts it down to laziness: "Lazy people find the quickest way of doing things," she says. It is appropriate, then, that her eureka moment struck during a monotonous commute.

To stave off boredom, Strand armed herself with electronic distractions — a Nintendo DS, a laptop, a phone and an MP3 player. "The problem," she says, "was that I had chargers scattered all over the place and I never seemed to be able to charge things when I needed to. I knew there had to be a better way."

The result of her subsequent work, Chagem, can power-up six electronic devices at the same time and is able to accommodate more than 80 per cent of all electronic gizmos on the market. Designed for portability, it can be used in caravans, boats and cars, and in any country. From idea to market, the project has taken two years to develop.

Inventing was not something that Strand had considered before, but she praises her father's inventive spirit and the inspiration provided by the roaring ambition of a cousin, the motorcyclist Barry Sheene. Furthermore, she was always interested in breaking the mould. "I was a punk when I was a teenager," she says, "and set up my own club night in London so that I could DJ the kind of music I wanted to hear. I've always wanted to go out and try things. I'm not shy."

Having trained as a secretary, Strand's typing skills led her into IT, where she discovered a knack for problem solving. "I worked as a troubleshooter at Barclays for 15 years," she says. "My job was to find better ways of doing things on the computer, to think around things. I had to be quick to pick up information, to learn how people did something and then change it."

Now, at 44, Strand has set up her own business, which she says is "a big life change at this age". After the conception of the Chagem, and after picking components and plastics and attracting an investor, she is learning how to sell and advertise her product, including appearing on a television shopping channel.

While all this is going on, Strand's instinct to invent seems to be strengthening. "Things keep popping into my head," she says. "I was in the pub with my friend yesterday and I found myself thinking up an invention to rock a baby." Her next product is a proximity sensor for personal belongings. Asked what will unite the products sold through her business, Logical Gadgets, she says they will be "gadgets that make your life easier".

[www.logicalgadgets.com](http://www.logicalgadgets.com)

