

The fathers of invention

Woodworking has a grand history of innovators creating new tools because they are essential to their craft. Celebrating 20 years of the Woodrat, British Woodworking pays tribute to the woodworkers who've become toolmakers because they had a good idea too good to keep to themselves



Most of us spend hours devising new ways to get around old problems. It's a kind of therapy. More often than not our solutions travel no further than our own workshops, at best the tips pages of magazines. But from time to time eureka moments hit woodworkers four-square between the ear defenders, and they come up with an idea that's worth developing, manufacturing and selling.

More like a slowly brightening low-energy bulb than a sudden flash, it happened to Martin Godfrey when, in 1983, he lent his router to a friend. "I had a little workshop and was thinking of making toys," Martin recalls. "My friend inverted the router in a bench, and I began thinking that it doesn't do much upside down. If it was the right way up, I thought, you could pull it forwards, and then I wondered if you could have a pointer on the left which a router would copy on the right." The WoodRat was borne. "They say necessity is the mother of invention. For me it's idle moments that create the best ideas. When you have an idea no one's had before it's a surprise; you don't know where it's come from. Suddenly you have an idea no one really wants because they've got on for years without it."

There's nothing easy about creating a new product, getting it made and then sold around the world, especially if you've had little training in product design and

Woodrat Martin Godfrey is constantly trying out new techniques and ideas in his quest to make the WoodRat ever better, and to encourage more woodworkers to understand the importance of overhead routing, and the advantages of controlled work

marketing. That's why Australian Terry Gosschalk called his company Piric Design when he invented the Wasp Sander, alluding to the victories by King Pyrrhus of Epirus over the Romans in the Pyrrhic war, which ended in 279BC. The monarch is reported to have said that one more such victory would utterly undo him because he had lost so many men. "It is a comment recognised by all inventors," says Terry Gosschalk. "The fun part is developing the idea and getting the patents. Then there's the long battle of marketing and selling the thing!"

Terry Gosschalk was a retired woodwork teacher in New South Wales when he started designing and making woodworking innovations. "I saw the need for devices I couldn't buy. Having seen the need I decided to make them." The first was his Wasp Sander, which converts a pillar drill into a belt sander. The very latest version will be launched in the next few months, when we'll be testing it in *British Woodworking*. "Drum sanders get used a lot and the abrasive needs replacing fairly often. The sleeves are expensive and quite difficult to change. I was thinking about this when I happened to be changing the abrasive on my belt sander. 'Why doesn't someone make a belt sander that can fit on a drill?' I asked myself. All it needed was a spring-loaded arm. I had a prototype made in 24 hours. Problem solved. Then we kept getting requests for a sander to get into nooks and crannies, so we made the Blowfly Sander."

Terry Gosschalk has now teamed up with fellow local inventor, Terry Walker so that they can develop more ideas between them, now as T&T Design (tantdesign.com.au). They have improved versions of all the sanders and we're helping them to find a distributor in Britain. You can see video clips

of their products at their website. You should find five films, including one for their latest product, the Redback Sander, which converts the belt off a belt sander into a hand sanding device that can be used for any number of purposes.

As Peter Koren, who created the FLIPSTOP, and Roger Gifkins whose eponymous Dovetail Jig has been such a hit, would agree, making woodworking equipment can make you more money than woodworking. "As a designer-maker I would lurch from one big commission to the next, but never certain what would lie ahead," says Peter Koren, "Regular overheads had to be paid from irregular income, and it was very much a case of feast or famine. The FLIPSTOP has smoothed out the bumps. I'm selling a product now instead of time."

The Pyrrhic price is that you take on so much more responsibility, and suddenly your product is out there for all and sundry to love or hate. Amongst so many things there is the constant challenge of balancing further developments, with costing and marketing of your existing product, while staying ahead of the imitators.

Passionate supporters

It was saddening to read recently a comment on the UKWorkshop (ukworkshop.co.uk) internet forum complaining that Martin Godfrey's WoodRat is made by woodworkers for woodworkers, and not by engineers. The WoodRat is now established as a global product, selling around the world, with passionate supporters all over the place. Those that love it do so because the router is there in front of their eyes. You can see exactly what's going on, rather than everything being hidden by the workpiece, as is the case with a router table. That it was initially designed to produce dovetails of all shapes and sizes is now incidental to most advocates, who employ it to cut joints of all sorts, from tenons, to housings to combs and beyond.

The prototype, and indeed early models, were made from wood, and Martin had to attend night school to learn how to make aluminium buttons for the early prototypes. The other 'students' were making model steam engines. "You don't necessarily have the mental tools when you're starting up," he says. He took the prototype to a



FlipStop Peter Koren in 1994 at Woodmex, where he launched FLIPSTOP with a giant model. Watch out for a test of the product next issue



Gripped Dave Crampton is a joiner and developed his Magic Grippers because so many of his colleagues have problems holding doors for trimming and hinging, but the invention now has many other uses

company making small scout aeroplanes, and they suggested a cable to move the carriage instead of the rack and pinion he'd designed. It proved a valuable choice because the tension can be adjusted, just as many parts within the device have room for manoeuvre to suit the operator's needs.

"People take the WoodRat home and work on it. They come back to me with a glow of having got something that empowers them; that's what makes it worthwhile. Some things are obvious, other things are more complex to understand."

The WoodRat's become something of a

Marmite brand, though, with a large number of fanatical users and a small but vocal group who get frustrated by what they perceive as failings. These are often the woodworkers who've identified the amazing potential in the WoodRat, can see how it can be adapted for so many functions and operations, but are stuck between waiting for the Martin and his team to develop additions or try making the modifications themselves with mixed results.

In WoodRat's case, the sole furrow Martin Godfrey has ploughed for 20 years may soon be joined by the Router Boss



Sanding Terry Gosschalk (right, above) and his partner Terry Walker, with their Wasp belt sand and Blowfly rotary sanding device



Joints Peter Quinn (left) created the Joint-Genie dowel jig because he couldn't make a kitchen accurately with what was available

from the USA, which appears still to be in the prototype phase (that's the Router Boss, not the USA). Competition from overseas may well help widen the market for an overhead routing solution like the WoodRat, and could force the team to produce some of those improvements people have been asking for. In fact, as we discovered on a recent visit, that's already happening.

Engineering woodworkers

Explaining the idiosyncracies of a product can be difficult for any innovator. Kevin Inkster, who was trained as an engineer

Got an idea?

Having spoken to many woodworking innovators we have noticed various lessons you can learn from their successes and failures should you come up with a brilliant idea you'd like to develop and market.

1. The team

Be careful who you work with. Many 'inventors' have little marketing and financial experience, and are easily persuaded to part with equity and/or resources to people they do not know.

2. Act the fool

Be careful knowing too much about your product when it comes to selling it at shows. Always keep your demonstrations simple, rather than trying to explain advanced operations your kit can achieve.

3. Find good contractors

It sounds obvious, but it's worth the effort of finding great sub-contractors, rather than racing for the Far East to find the cheapest producers.

4. Protect what you can

The maxim is always that it's only worth applying for patents if you're willing to fight any contraventions. A patent may not ward off everyone, but it will discourage a large number of potential imitators, especially those whose reputation might suffer by copying and are already in the woodworking market. If you get a patent or registered trademark make sure it covers the main territories where you are likely to be selling, notably the USA and Europe, as well as your home nation.

5. Work on PR

You will soon learn which advertisements do and don't work. It is also essential you develop a good relationship with the press by producing good press releases. We have an information sheet on how to write a press release that journalists will notice and understand. If you'd like one just email us at advice@britishwoodworking.com.

6. Start with local people

It's a good idea while you are developing your prototypes and producing the initial runs to work with local engineers and companies to make communication easier.

before taking to woodwork, and then invented the Arbortech Woodcarver to shape chair seats, is a rarity. So is Peter Quinn, who was apprenticed with Westland on helicopters as an aircraft engineer. He was running his own restoration business when he bought a Somerset cottage, and found himself the proud owner of a huge pile of oak and cherry and ash, with which he was sure he could build a kitchen. He tried using a biscuit jointer. "I've never handled such a neanderthal tool," he remembers. "I don't like it. Ok, it's quick to cut the slot and flood it with glue, but then you have to wait overnight for it to set, and I had to mortgage the house to buy enough sash cramps. It is totally misrepresented as a speedy solution."

A friend lent him an old Record dowelling jig, probably a 406, which works on the mirroring concept. He realised he could make a better one himself, and after 17 prototypes the Joint-Genie was born. He

wanted instant accurate joints and the dowel has proved to be the ideal mechanism, with so much friction and accuracy. "I'm an idle git," he says, laughingly. "I didn't want any marking out nor messing around. I wanted the fastest, easiest and most effective precision jointing means man could devise, a magically simple solution: a Joint-Genie."

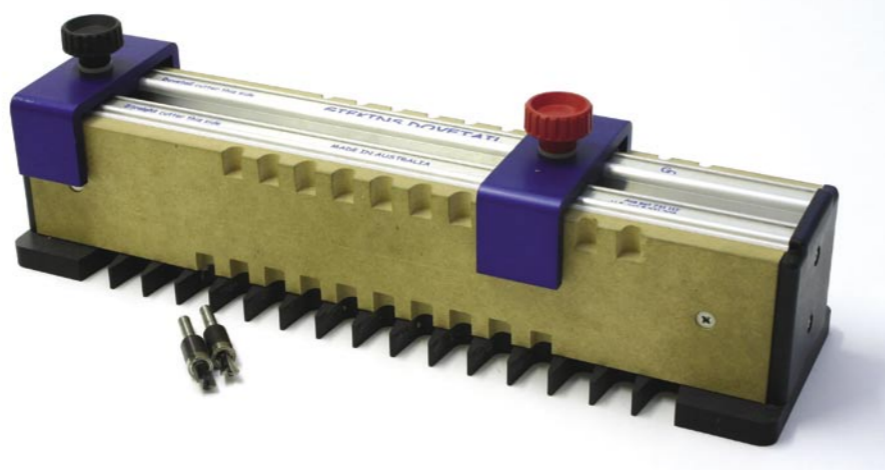
That's not to say he's been idle in making and promoting the Joint-Genie. Schools and special schools have loved it, and he's never been able to retrieve trial samples they've given to cabinetmakers and carpenters. "It's been hard work, and there's no one there to help you," he says. One of his team has taken the Joint-Genie out to Africa a couple of times, where they use it with a brace and bit.

Industrial designers

Most have developed their products themselves, without any background in industrial design or engineering. "Being a woodworker was not an issue," says Roger Gifkins. "The difficulty was not knowing what the possibilities were as far as materials to use and methods of manufacture. It was a steep learning curve, as I wanted to do the manufacturing myself. One good thing is that I had been using the jig in my own work, so it was very well tried and tested before it reached the market."

That's why Martin Godfrey knows about the slack in the bar on the WoodRat, which some woodworkers have criticised. "We make it with a little bit of movement in it, and you remove the slack with your fingers when you tighten the cramps on the bar." In fact, one of the latest WoodRat evolutions has been new stops, to which can be fixed wooden facings. You can use the facing to remove the tiny amount of slack in the bar. "That may not be an engineer's solution, but a woodworker wouldn't think twice about it."

Martin adds the example of the plunging router as a piece of technology that hadn't changed much since its introduction in the late 1940s. It had always needed two hands to push it down, which has always made using a router table particularly difficult. WoodRat's solution was the creation of the Plunge Bars, which enable the woodworker to adjust the height of the cutter one-handed, whether you're using the router



Dovetailed The Gifkins Dovetail Jig is a boxmaker's dream, though Roger Gifkins only made the first ones for himself. He thought the market was limited to a few professionals like himself. He never expected it to be so successful, and now spends no more than two months a year making boxes



freehand, in a table or in a WoodRat. "It was a problem that needed solving," he explains. "We were way ahead of the fine depth adjuster for router tables."

Added extras

Getting people to make things for your product is one of the biggest headaches for our innovators. Roger Gifkins advises any woodworkers with a good idea to get prototypes and early models made locally. "Being able to sit down with people to discuss the details is much more effective than by phone or email." Martin Godfrey, who has often needed to adjust the design of the WoodRat to suit new uses, agrees. "You can often find local retired engineers to help you out. They can do 50-100 off a part to get you going."

Martin Godfrey's not alone in facing a challenge of finding companies to supply the parts he needs. Peter Koren has been making his FLIPSTOP for nearly 15 years. "When I started, things were easier in some ways than now," he says. "One big problem

is finding sub-contractors to do the engineering. At the Southern Manufacturing Show recently there were very clever people working in medical and aerospace markets, but it's hard to find someone to make 10,000 washers or ordinary turned parts with so much manufacturing going abroad. But there's a high risk for low volumes. We've always been very quality-minded, and it's astonishing what can go wrong."

Peter Quinn gets all the parts for the Joint-Genie made in Britain. The tabs are laser cut in Bristol, the bars in Weymouth and Somerset. He's invested nearly £500,000 in the product and recommends woodworkers with a bright idea make good prototypes, file for a patent and then go out and find the investment.

As the creator of the FLIPSTOP, Peter Koren says: "It's not good enough just to do simple things like making washers which people can do elsewhere for less. Our only hope as a nation is to be clever and to be at the forefront of developments. That's where the future lies."

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