

# Woodworking

## CRAFTS

HAND, POWER & GREEN WOODWORKING • TURNING • RESTORATION • DIY

## How to make a Japanese screen



### PROJECTS

Turned hourglass

Plans 4 You – Library steps

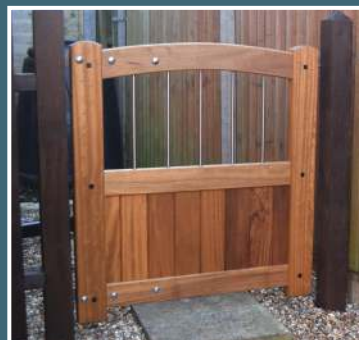
### TECHNIQUES

Windsor chair repair

Cabinet door fit

Upcycled shop drawers

MAKE A SASH WINDOW • MAKITA MITRE SAW TEST • GARDEN GATE • MAKING A LAP SHAVE





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### Woodwork on the web

To find more great projects, tests and techniques like these, visit our fantastic website at:  
[www.woodworkersinstitute.com](http://www.woodworkersinstitute.com)





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Hello everyone and welcome to the February issue of Woodworking Crafts



### Making life easy

I'm still in hibernating mode, maybe you are too? Well anyway, I must get down to the annual workshop clear-out – soon, but not quite yet. I've been doing a bit of armchair – i.e. online – tool buying. We do get the privileged chance to try out new kit, but we editors often buy things we really need... well, think we need. Many of them are small items that fill in gaps in the woodworking arsenal, such as spray board adhesive for bonding curved plywood together, little clamps for delicate jobs and, recently, a thread deburring tool. Ever cut a bolt or a piece of studding shorter, then had to remake the end with a file or grinder so you can get a nut to fit? Really, really annoying, but a deburring cone deals with it effortlessly. It's stuff like that which turns a workshop session from tedious and frustrating into an absolute breeze. One can never have enough tools I would say...

### Perchance to dream

Our main feature is about occasional contributor Brendan Devitt-Spooner's dream house, an amazing contemporary build with the workshop literally a few yards from his front door – a very short commute indeed. I think we all openly, or secretly, harbour a desire for a proper workspace that isn't too far from the kettle or the lounge. Brendan's domain makes for enviousness in us all, but we can still take the time to try to resolve how to create the ideal working space, be it permanent, temporary, in our kitchen or back room, garage or shed. If you don't have lots of machines you don't need lots of space and good weather, when it comes, makes for a great outdoor workshop. So see what you can devise within your means and create a nicer place to work – hopefully right nearby an even nicer place to live. Please enjoy this issue and your craft, whatever it may be.

*Anthony Bailey*

Anthony Bailey, Editor

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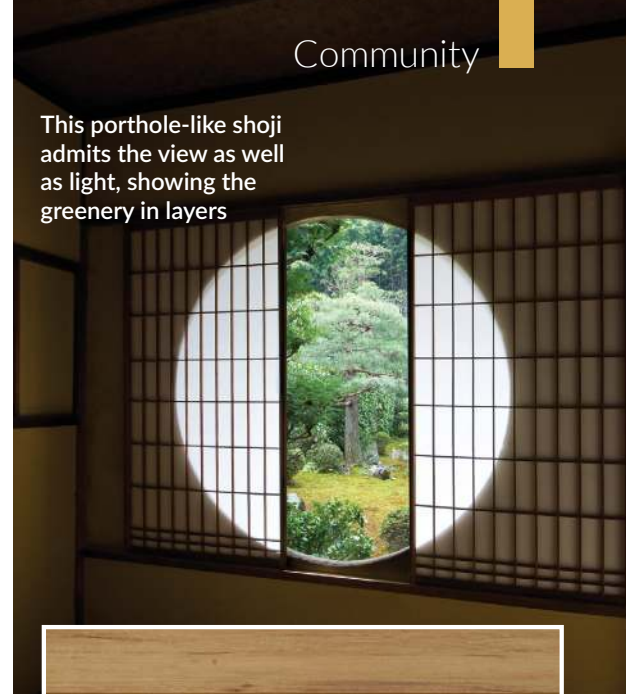
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This porthole-like shoji admits the view as well as light, showing the greenery in layers



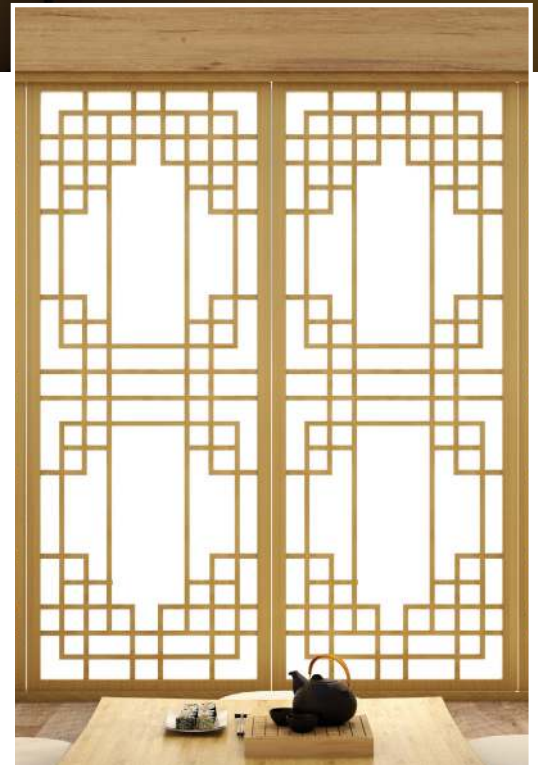
# Design INSPIRATION

You need a very special setting to achieve a calm and contemplative existence

An open space does not have to be empty or desolate – adding the right elements can create a very calming environment



Each room has its own shoji creating a layered effect as they are opened



The careful use of overlapping squares creates yet another design variation



These coloured papers admit the light beautifully, almost like stained glass

This traditional Japanese setting brings the indoors and outdoors together







# Japanese-style cabinet doors

**Mitch Peacock** explains why you should turn your woodwork projects Japanese



## Shoji

In traditional Japanese architecture a shoji is a door, window or room divider consisting of a wooden frame that holds together a lattice of wood or bamboo covered in traditionally made or modern manufactured paper.

## Shoji addiction

Before I go any further, I should perhaps warn of the addictive nature of shoji building – I built my first pair of shoji, as sliding screens, only a few months ago, and yet here I am

choosing them again where simple frame and panel or even solid MDF doors would function perfectly. Eighty seven joints versus none – why not?

## Design

My general purpose workbench has for years been gazed down on by ugly gas and electric meters. A recent swap to smart meters gave me the opportunity of boxing them in, as well as building some more shoji. I designed a relatively simple shoji, consisting of a main

frame, hipboard, and lattice. Because the doors were to be overlaid and hinged, the nominal width of each shoji was half the cabinet width, while its height equalled that of the cabinet.

Should you wish to make sliding shoji, remember that the nominal width should be increased so that, when closed, the stiles fully overlap – for two doors that would mean increasing each one's width by half the width of a stile; two thirds for three doors, etc.



Initially I planned for three vertical and three horizontal lattice bars, or kumiko. After mocking this out, I increased to six horizontal kumiko. Quite often what looks good on paper, proves less so when built, so the short time taken to make a model or mock up an idea is well spent.

With the proportions looking right, the stiles would not be sufficiently wide to mount the European hinges I had in mind. However, to allow for tool hanging, and protection from sharp tools, I planned on backing my shoji with 9mm MDF. By supplementing this with additional 9mm-thick MDF blocks, fitted within the lattice work where the hinges fell, it would give me the necessary fixing points for the hinges.

## Materials

Shoji are commonly constructed from softwoods such as cedar or pine, with clear, quarter-sawn grain being preferred. That would be my first choice too, but with my stack of reclaimed timber and workshop offcuts getting out of hand, I rummaged through those and found some suitable candidates.

In my eyes, the shoji hipboard is the main star, and I picked out the pine back and bottom of a drawer from a chest that had been savaged by wood beetle. For the most part the beetle had kept to the oak of the carcass and drawer fronts, and the pine had survived intact.

For the frame members, the side rail of an old pine bed yielded sufficient material. This was from the days when knotty pine was in fashion, but thankfully the only significant knot in this piece was sound and I felt happy to work with it.

The kumiko in my design are of a particularly small section, where tiny knots and grain run-out could seriously weaken them, so I was lucky to find an offcut of clear, straight and tight-grained pine from which to harvest them.

Luck was with me again, when I found enough 9mm MDF offcuts for the backs and hinge blocks.

## CONSTRUCTION

### Hipboards

**1** I first prepared the two hipboards. The book-matched centre sections were resawn from the pine drawer back. I use a marking gauge to mark centre all around the board. There



The ugly gas and electric utilities



The removable cover-up tool board



wasn't much thickness to play with, so I checked the setting from both faces. The gauge gave me a little V where the pin spread the fibres each way. This would guide the saw blade initially.

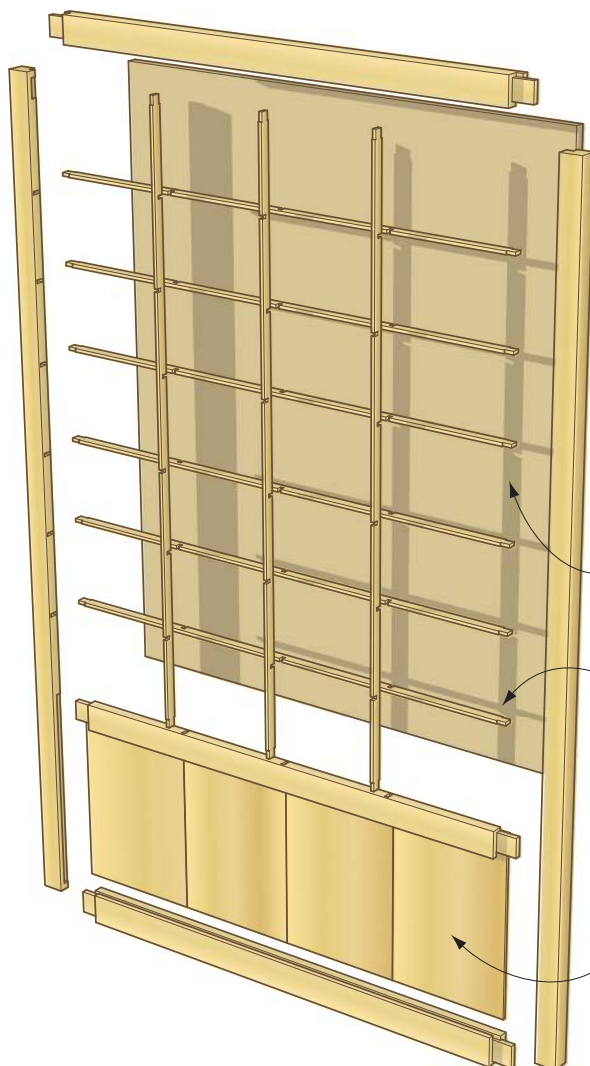
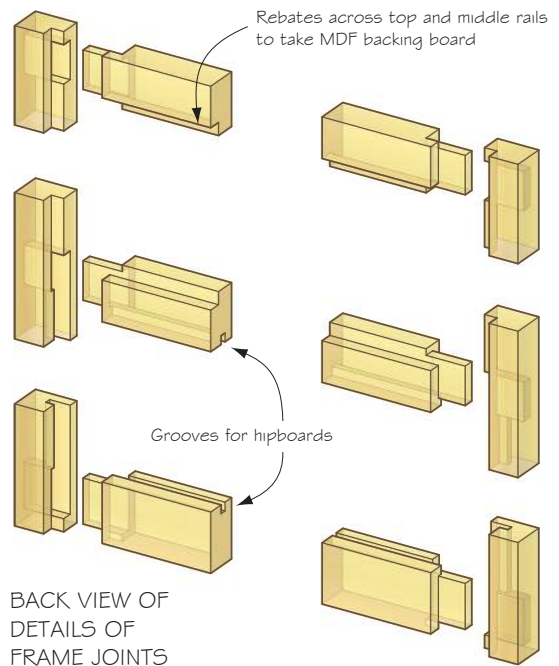
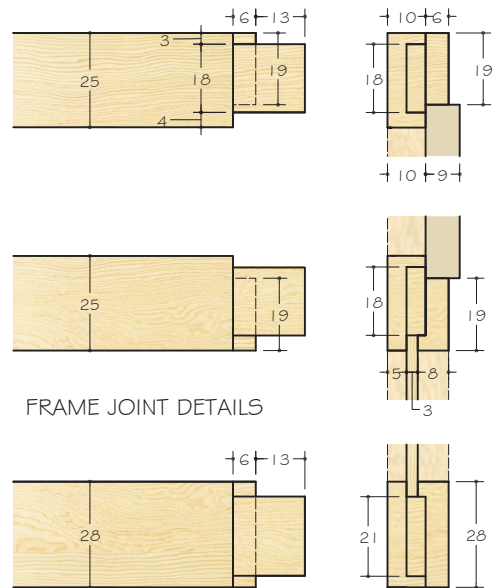
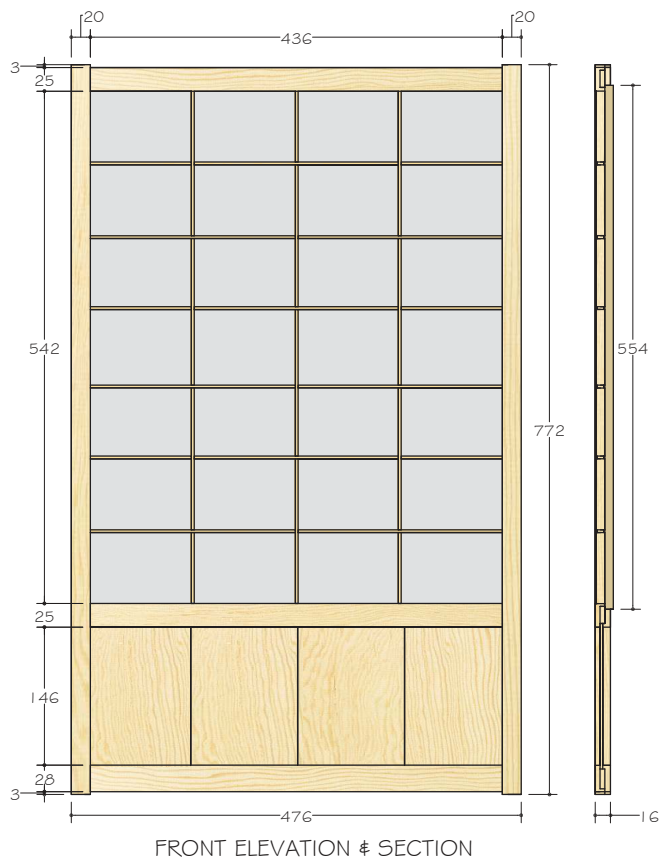
**2** A bandsaw might be the obvious choice now, but instead I used my ryoba saw. I sawed the corners first, deepening the cuts until I had joined up all around the board. These cuts helped guide the blade while the remaining diamond in the centre was sawn through to reveal the book match.



**3** I smoothed these book match pieces with a Japanese plane, and thickened the drawer bottom to match them. A planing stop was dogged and clamped to the bench to cope with what were now quite thin boards. I was able to retain the high colour contrast, on the show side, with judicious use of the smoother.

**4** The boards were butterfly jointed on my Japanese planing board (a longitudinal edge shooting board with a stop) ensuring a flat panel when glued up. ➤

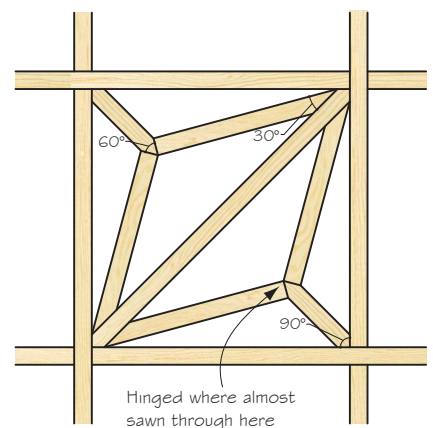




9mm thick MDF panel located in 6mm deep rebates all round in back of frame

Kumiko or lattice bars tenoned into frame, shoulders on sides only. Kumiko lattice is formed using halving joints which alternate front to back across and down.

Hipboards in grooves in rails and stiles



ASANOHA KUMIKO PATTERN



**5** One large panel was glued up, using masking tape hinges on the front to maintain alignment and reduce glue squeeze-out on the show surface.

**6** Once crosscut into two hipboards, any glue and slight out of alignment was removed using a card scraper. The slightly oversized hipboards were shot to fit the frame later, leaving plenty of room for expansion in their width.

## Frame

**7** The frame parts were cut well oversized in length to allow horns on the stiles, and in section, due to the risk of warping, from the pine bed rail. A bin-full of shavings later and the blank stiles and rails were finally dimensioned square and true. I finished them smooth, lest I forget before assembly, after which the internal faces would prove very awkward to smooth.

**8** Frames were laid out with the blanks, and the pieces arranged for the most pleasing effect. To me, this is where the grain appears as puffed-out, rather than sucked in.

**9** The lattice area is usually covered on the back with shoji paper let into a very shallow rebate (paper deep, and kumiko thickness wide). I chose to cut 6mm rebates to seat the MDF backs, and these were run in by hand using a wooden rebate plane in the stiles and the top and middle rails.

On larger shoji, I would prefer to joint the frame with twin stub tenons, although it is perfectly acceptable to use a single one, especially with today's adhesives. Single stub tenons were chosen here.

**10** The mortise and tenon locations were marked out on the stiles and rails respectively, ganging the parts up to ensure consistency. Shoulders were marked from the blanks' centres, leaving horns on the stiles, and overly long tenons, which could be cut to fit later. Rebates, for the MDF back mean that the tenon shoulders are stepped.

**11** Traditional Japanese practice is to chop and scrape the mortises until you can see daylight through the bottom, and so I stropped my mortise chisel to obtain a very keen edge first. With careful use of a light hammer ➤





and depth gauge, it's possible to get very close to depth without breaking through, after which the bottom can be delicately scraped flat with a good chisel edge.

**12** To hold the hipboard, a groove was made in the bottom and middle rails, and between mortises at the bottom of the stiles. The latter stopped grooves, being chopped and then finished flat with a router plane.

**13** Tenons were prepared next, sawing the shoulders and cheeks with a dozuki saw, and cleaning up the shoulders by paring.

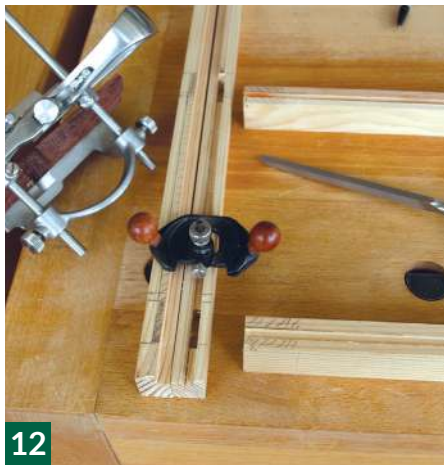
**14** I always saw tenon cheeks a little shy so they can be cleaned up smooth with the router plane. Tenons are cut to length using a depth gauge to ensure just a little gap remains at the base of the mortise. The tenons also receive a small chamfer around the end to ease assembly once glue is applied.

**15** A dry-fit of the frame with the hipboard demonstrates how small these shoji are compared to those in my workshop windows.

## Lattice

**16** The kumiko for the lattice are ripped from the quarter-sawn pine board. After each one is separated, the edge of the board is jointed so that each kumiko will have a clean face side with square edges.

**17** Having such a small section, the kumiko can be ganged for planing to dimension, which greatly eases plane control and speeds up the job. Extreme care is taken since the kumiko want to bend up off the bench, and could easily snap in half.



12



13



14



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**18-19** Kumiko prepared, the mortises for them can be laid out on the frame stiles and rails. With only shoulders to the front and back, a piece of kumiko is used to offset one side of the mortise from the other.

**20-21** Chopping the mortises is greatly aided by boring the centre out. However, chopping and removing the remaining waste from the 36 tiny holes still required a lot of patience.

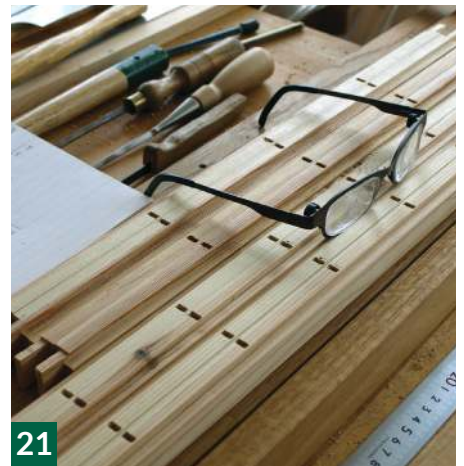
**22** The kumiko are ganged up as verticals and horizontals, between stiles and rails respectively, to copy the layout for halving joints and tenons. A woven kumiko lattice, with halvings alternating front and back, tends to remain tight and flat. To avoid mistakes I lay the kumiko in position and lightly pencil in the notch positions before knifing and cutting these joints.

**23-24** Once again ganged, the halving joints and tenons are sawn and pared. I prepared a notched jig to both hold the kumiko and gauge the halving depth.

## Assembly

The lattice weave of the kumiko can appear quite a challenge to assemble, but laying the horizontal pieces on their sides, one at a time as they are woven in, and twisting them upright as the joints mate, works well.

**25** A successful dry fit is soon followed by a glue-up. Less is more when it comes to the halving joints and lattice mortises, as clean-up of any squeeze-out could be a time-consuming and tricky job. The frame joints should be well fitted, and require just enough glue to cover their surfaces.





## Backing

**26** Now would normally be the time to paste shoji paper over the back of the lattice. Rice glue is traditional, and I used that on my workshop shoji, pictured here at that stage.

**27-28** Instead, I prepared a fitted MDF back, painted black for contrast, and glued in place with two lattice infill pieces. Finally, I trimmed the stile horns, leaving a little proud for appearance. On sliding shoji, bottoms are left slightly proud to avoid wear.

## Finishing

Apart from the backboard, I have left the shoji bare. The finish off the smoothing plane is like glass in most places, and I am loath to apply any polish. Simple handles will avoid dirty paw prints, and the pine can continue to age naturally.

## IN CONCLUSION

I'm pleased with the result, and I would certainly make more cabinet doors like this in the future. I worked unplugged, up to the point of hanging the cabinet and enjoyed every minute. Using reclaimed timber can throw up challenges, such as knots in awkward places, as I found here. It can also supply an instant patina, very difficult to mimic. Although the joinery is quite basic, the small size and large number of joints makes for excellent practice. Finally, I would encourage anyone to try making a shoji, but reiterate the addiction warning. ■

## SAFETY NOTE

If you box in your services, then it is wise to ensure your main gas shut-off valve and meter, electric supply fuse, meters and distribution box, all remain easily located, accessible and ventilated.

## MORE INFORMATION

I recommend the book *Making Shoji* by Toshio Odate (ISBN 0-85442-090-8)

The build of my workshop shoji is available on my YouTube channel ([https://youtu.be/mvI\\_cRbT2Hw](https://youtu.be/mvI_cRbT2Hw))



## OPTIONS

- Kumiko patterns could be added.
- Hipboards could be dispensed with.
- Glass back could be installed.
- Feet to make a room divider.





# Meet the contributors...

We put all of this month's professional and reader contributors here, so you know exactly who they are and what they do



## Mitch Peacock

Mitch is a self-taught woodworker from East Sussex, England, with a passion for both plugged and unplugged woodworking. He took up woodworking in the millennium, after a very different career in telecommunications. Mitch has a woodworking YouTube channel, and teaches both online and face to face.

Web: [www.WOmadeOD.co.uk](http://www.WOmadeOD.co.uk)

[www.youtube.com/c/WOmadeOD](http://www.youtube.com/c/WOmadeOD)



## Louise Biggs

Having completed her City & Guilds, Louise trained for a further four years at the London College of Furniture. She joined a London firm working for the top antique dealers and interior designers in London before starting her own business designing and making bespoke furniture and restoring furniture.

Web: [www.anthemion-furniture.co.uk](http://www.anthemion-furniture.co.uk)



## Brendan Devitt-Spooner

Brendan has been involved with wood since school, first as a teacher of crafts in the '70s/'80s, then as furniture designer/maker working from his workshop in Angmering, West Sussex. He exhibits his work mainly in the south east but most work comes through his showroom at his workshop.



## Gary Marshall

Gary has had a life-long interest in woodlands and the countryside. He trained in countryside management and subsequently ran a company working with the local County Councils and Unitary Authority and their Countryside and Rights of Way Teams, as well as a wide range of conservation organisations.



## Jamie Lake

Jamie is a MOD apprentice-trained aircraft technician with 17 years in that field. Now he is a craftperson/engineer. His real passion in life is woodworking, which he has been doing in his spare time for more than 10 years. He has made many items of furniture, from jewellery boxes and key cupboards to display cabinets and outdoor furniture.



## Michael T Collins

British-born Michael has been working with wood off and on for 40 years. He moved to New York in 1996 and over the years has made bespoke furniture including clocks, inlay work, Adam fireplaces, book cases and reproduction furniture.

Web: [www.sawdustandwoodchips.com](http://www.sawdustandwoodchips.com)



## Philip Greenwood

Philip has been turning wood since 1980 and started turning professionally in 1986. He was accepted on to the Register of Professional Turners (RPT) in 2006. He is also a member of the AWGB. He can be seen working in his workshop in North Yorkshire and has demonstrated at the woodworking show at Harrogate since 2008. He runs courses at his workshop.

Web: [www.woodturningintoart.co.uk](http://www.woodturningintoart.co.uk)



## Simon Rodway

Simon has been an illustrator for our magazine since 'the dawn of time' itself, drawing on his experience in the field of architecture. He also runs LineMine, a website with articles and online courses on drawing software. A new course, SketchUp for Woodworkers, is proving really popular.

Web: [www.linemine.com/courses](http://www.linemine.com/courses)

**Your face and details could appear here in our 'rogues' gallery' if you write an article for the magazine, and you could be rewarded for your efforts too.**

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PHOTOGRAPHS BY JAMIE LAKE

# GARDEN GATE

All good projects take time to develop and this one by **Jamie Lake** was no exception...

## Post project

**T**his project was born out of necessity. I built my workshop four years ago and had to find a way to stop my dog going round the back and disappearing under the fence. Money was tight but I had some plywood lying around, so I cemented some posts in and screwed the ply in place with the intention of building a proper gate later.

## Basic preparation

**1** Fast-forward four years and it was time to change the plywood that was disintegrating by the day. I selected some iroko for the gate. I cut the timber down to more manageable lengths and put them over the planer and through the thicknesser, so now I had some nice, clean, parallel timber.

**2** I let these settle overnight and then did a very light pass in the

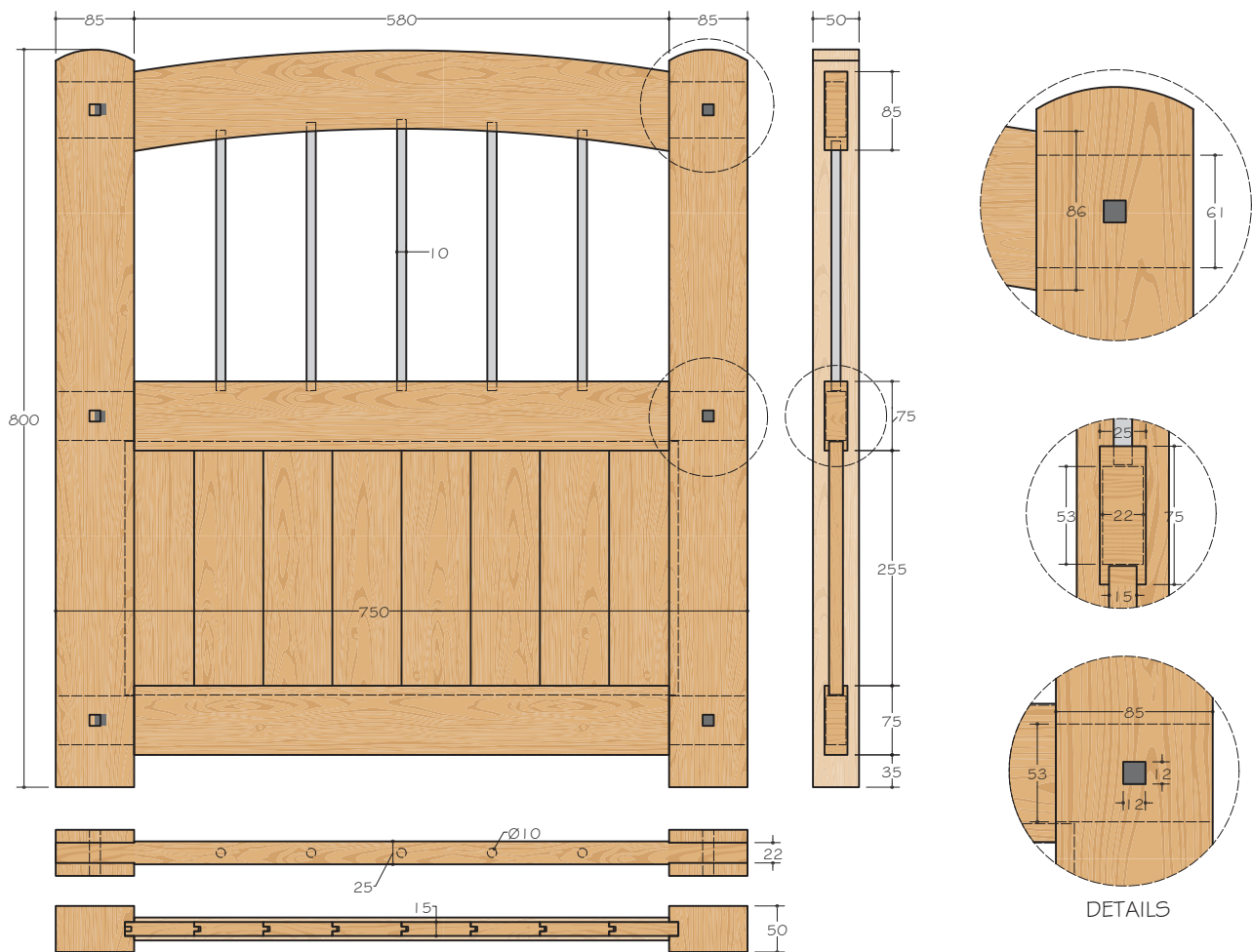
thicknesser to get rid of any movement. Then I cut out all of the parts overlength, I did this so that once they had been through the thicknesser I could cut the 'snipe' off. As the posts were thicker than the rails I glued two boards together to get them to the right size. I used a PU foaming waterproof glue. I set these aside to dry.

## Joint cutting

**3** Once dry I cleaned up the posts, got rid of the foam from the glue and squared them up on the planer/thicknesser. I also cut them to the correct length. Now I set up my mortise gauge and marked all three mortises on both posts. As these were going to be through-mortises I marked them on both sides. The curved top rail had a larger tenon so I measured and marked these larger.

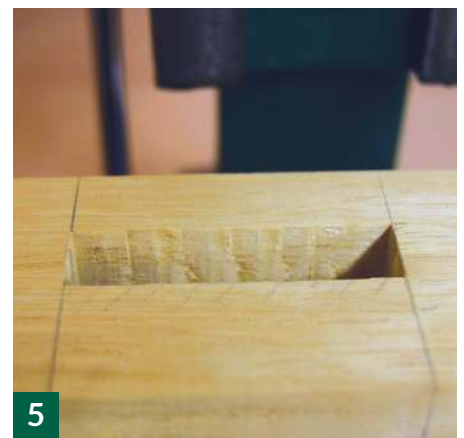
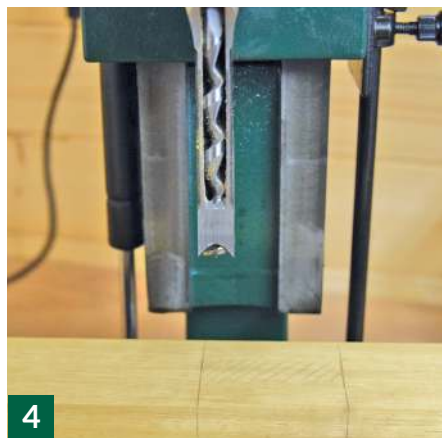






**4** I set up the mortise machine and clamped a post to the bed of the machine. The largest mortise chisel I have is  $\frac{1}{2}$ in, so I would have to cut them in several passes for the length and width.

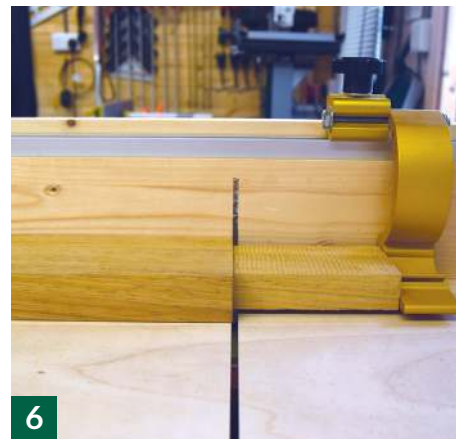
**5** These chisels were new and very sharp but it was still hard going. I cut to just over halfway through as these were through-tenons. I cut from both sides to minimise any breakout. (A word of caution, do not touch a mortise chisel immediately after use as it is very hot.)



### Tenons and rails

I cut the rails to 20mm oversize so the tenons on both sides would be 10mm longer than needed. The mid and bottom rail are the same width so I set the tablesaw up and cut them. The curved top rail needed to be wider so I reset the fence and cut this rail. Once all of these rails were cut I marked the tenons with the mortise gauge and a square. I like to scribe the lines as it helps to minimise breakout. I also made sure to mark each tenon 10mm longer than needed.

**6** To cut the tenons I used the tablesaw with a sled. I have a stop on the sled which I set to the length of the tenons. I took multiple passes on all of the faces and then reset the height of the blade and cut all of the sides. This left a rough surface but I needed to adjust them to fit the tenons anyway. NOTE – The top guard has been removed so you can see the cut path clearly. I used a combination of chisels and a shoulder plane to fine-adjust each tenon in turn. While doing this I checked the fit. I knew that this would





be a very difficult glue-up, so I wanted the tenons to be a sliding fit – not too loose and definitely not to tight. Once all was done I test-fitted them all together to make sure there were no gaps and everything was square.

Now came the time to curve the top rail. I used a metre-long rule, bent it to the curve I wanted and then, with my third hand – my wife that is – used a sharp pencil to mark the top of the curve then moved this down to mark the bottom of the curve.

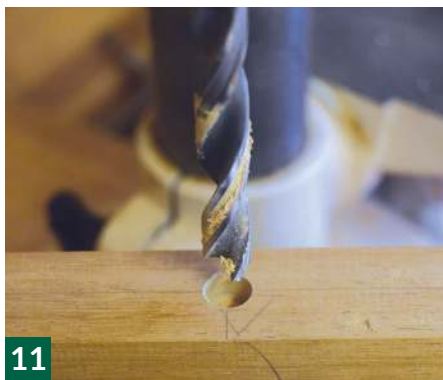
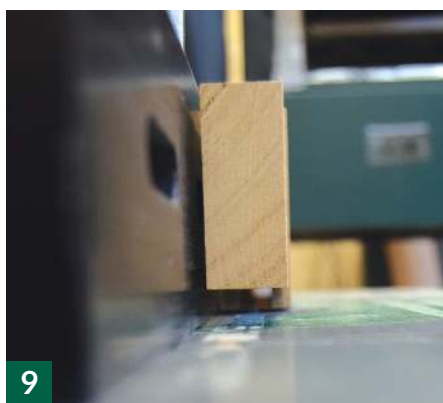
**7** I put the thinnest blade I have in my bandsaw and cut the curved top rail out, leaving the line and a little bit of extra wood. I used an oscillating spindle sander to smooth out the curve. A little note here – I have a relatively small workshop so I tend to buy bench-top machines, which I put away in cupboards and drawers to allow more working space. But in mid-project when I get them out, I tend to use them on the floor. This gives me more space and better control over them.

**8** While the bandsaw and spindle sander were still set up I used them to cut and smooth the curves on the top of the posts.

## Panel grooving

I had some thin tongue and groove iroko boards left over from another project and just had enough for this gate. With the frame of the gate fitted together I took some measurements and cut these to length. They were going to fit in a groove in the gate, the panels being 15mm thick. The closest router bit I had was 12mm, so I had to rebate the back side of the panels. I marked on the posts and the rails where the groove would be.

**9** My small router table was set up. It needed two settings as the rails are thinner, and the groove would be centred on both the rails and the posts. I set up for the rails first as these would just push straight through. Once these were cut I reset the fence and used an offcut of post so I could dial in the setting. The groove would go from the bottom mortise to the mid mortise. I turned on the router and slowly lowered the post down on to the bit so it would start in the mortise, then pushed the post along to the mid-mortise. I then turned off the router and lifted the post off.



**10** Aaargh! I've made a mistake. I have cut the groove on the wrong side of the post. Damn, this is so annoying. I thought of several different ways of fixing this but instead I decided to celebrate my mistake. I extended the groove up to the top mortise and later I would mill up some wenge and glue it in place. I left it a little proud and used a hand plane to level it with the post.

With the grooves done and my mistake rectified I measured and cut all of the tongue and groove panels to length. The two end panels were ripped down the middle to centre the panels. These needed a rebate so they could fit in the groove. I did the rebates across the grain on the tablesaw using the sled, the same as I did for the tenons. The end panels also needed rebates 'along the grain'. I did this on the router table and, as it was a



very shallow groove, only one pass was needed.

**11** For the top part of the gate I used 10mm marine grade stainless steel bar. I measured the inside gap of the posts and decided to use five bars. When I equally divided up the distance I needed to mark approximately every 90mm on centre. For the curved rail I tapped the offcuts back on and marked the holes on this. Once both the top rail and middle were marked I clamped them in turn in a vice on the pillar drill and drilled the holes. I drilled to a depth of 10mm in the top of the middle rail. But the holes in the bottom of the top rail were approximately 10mm deep as I had to drill right through the area that would be cut away afterwards.

**12** I test-fitted it all together.



**13** Then I took it apart and used a large roundover router cutter on the edges of the posts and the top edge of the curved rail. I used a small roundover on the bottom of the curved rail, top of the middle rail and the bottom of the bottom rail. I then used a 45° chamfer cutter on the top of the bottom rail and the bottom of the top rail. I did all of these tasks on the router table.

I gave everything a good sanding to 120 grit as this is what the finish dictated. I decided to glue it all together before I applied the finish.

## Assembly time

**14** Now was the time for the dreaded glue-up. I wanted it to go as smoothly as possible so I set everything up beforehand. This was going to be a difficult glue-up so I put the whole of the middle section together. The PU glue I was using needs water to cure it, so I applied water to the mortises of one post and then the glue to the tenons and slid the post on. I did exactly the same for the other side. Then I clamped it up and checked for square. Actually, this glue-up wasn't too bad – it must have been the prior planning that made it go so smoothly.

**15** Once dry, I used a flushcut saw to cut the ends of the tenons off.

**16** I wanted to peg the tenons with a square peg. Making the peg mortises would have been easier done before glue-up. I had to put the mortiser on the floor so I had more room to work with. Then I put a scrap piece of wood on the bed of the mortiser and propped up the other end of the gate with some scrap. I made sure everything was level and then bored all the way through. I milled up some wenge to fit the mortises and glued them in place.

**17** Once dry, I cut them flush with a flushcut saw, cleaned the foamed-up glue and re-sanded everything to 120 grit. I then put two coats of Osmo Poly X Oil with UV protection on the gate and the project was done.

## Fitting the gate

Now came the day of fitting the gate. I removed the plywood and the weeds from the area. I cut two lengths of a sleeper and fitted them in place.



13



14



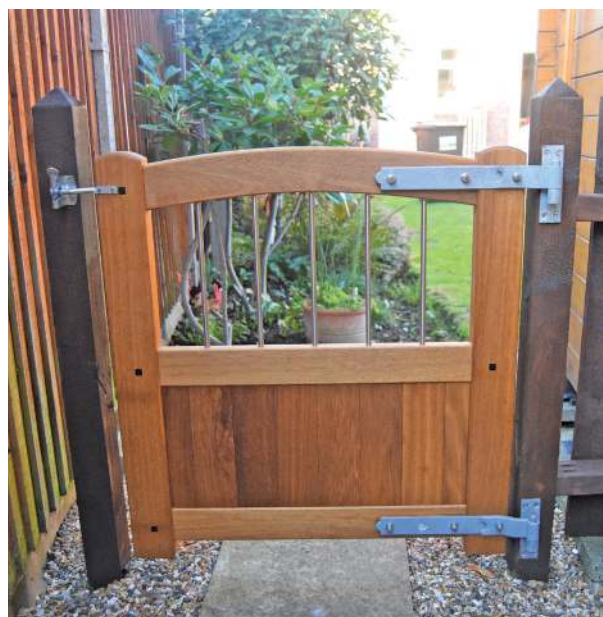
15



16



17



Between these I put a layer of weed control fabric and then back-filled with pea shingle. One post had quite a gap between it and the workshop so I cut some treated 2x4 to fit the gap. I used pocket-hole screws to attach them to the post and then screwed one picket to these.

I had to make some spacers for the hinges as the rails were thinner than the posts. These were made out of some scrap iroko and cut and shaped to the profile of the hinges. I spaced

the hinges accordingly and drilled and fitted some coach bolts to the holes. I fitted the other side of the bottom hinge to the post, I then levelled the gate and fitted the other half of the top hinge.

After the hinges were installed I fitted the catch and gave the posts and the picket a good coat of paint. Then took a step back and admired my work.

We can now get to our compost bin without climbing over a rotten piece of plywood. ■



# Woodland ways

PHOTOGRAPHS BY GARY MARSHALL

## Piers, jetties & walkways

Waterfront,  
Lunenburg,  
Nova Scotia

Timber raised walkway  
over marshy area

Where wet timber is an asset, as  
**Gary Marshall** explains

**S**ome sources cite the longest wooden pier in the world as being just 2.5 hours drive south of Perth in Western Australia. This is the 1,841m Busselton Jetty. The construction dates back to 1853 but has been extended many times. It has suffered damage from fires, woodboring creatures, cyclones and occasional neglect. Built for commercial use so that vessels could load and unload supplies to this previously remote part of Australia, it's now a thriving tourist attraction. The main tree used was the jarrah (*Eucalyptus marginata*), indigenous to Western Australia. Its resistance to rot makes it a popular choice for hot tubs too.

Structures such as this – and even concrete and steel structures built on top of sunken timber pilings – make use of old methods that even our

Neolithic forebears in their lake villages understood. In the right conditions, timber piles used below the water table prove practically invulnerable to decay.

Problems arise in brackish and marine environments, particularly from boring creatures such as gribble worm and ship worm. Creosoting the timber or vacuum PVC sheathing can help reduce this concern. Timbers in their raw state are known for their remarkably preserved state when unearthed from anaerobic bogs.

In tropical climates termites are frequently the culprits in timber structure failure. In temperate climates it's usually rot caused by fungi that jeopardises driven posts and timbers at the point where they meet the air, either above or at the water table level. That's because fungi have just what they need to thrive in this kind of location: moisture rather than



inundated wetness, oxygen from the air and food from the timber itself.

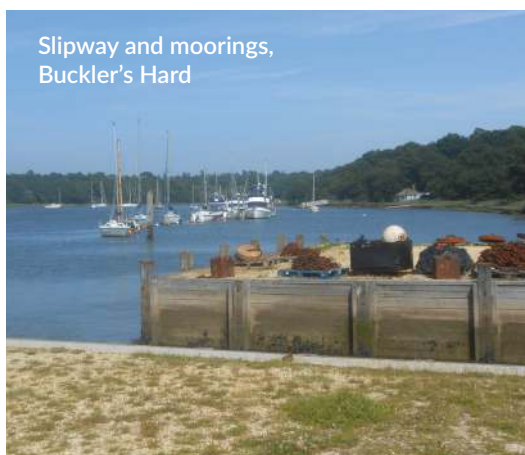
Throughout this article are photographic examples of timber that helps us to access our watery surroundings. Some structures are timber-clad, others are 100% timber construction and there's everything in between.

So what of the species used to make such structures? To a certain extent this is likely to be based on the best local piling timber available. In 1176 the old London Bridge was built on stone infilled structures formed from elm – these lasted for around 600 years. Brooklyn Bridge is built on top of massive yellow pine pilings designed to withstand 80,000 tons. Much of Venice is built over alder (*Alnus* spp.), larch (*Larix* spp.) and oak (*Quercus* spp.) piles. Winchester Cathedral rests on beech (*Fagus sylvatica*) piling (although now supplemented by concrete laid by the daring diver William Walker). The Paris Metro runs on a track supported by tropical ekki from the 60m-tall *Lophira alata*. Ekki is often cited as one of the best trees for piling work. Another preferred tree is greenheart, again from West Africa. This tree is now, unfortunately, on the endangered species list, although some FSC timber is available – if you search hard enough. Cloeziana is another tropical hardwood suitable for watery structures. *Eucalyptus cleoziana* is native to Queensland but is widely cultivated in plantations in other tropical countries, including Zimbabwe.

Timber pilings are extensively used on-shore in Canada and the US but rarely so in the UK. Nevertheless, here is another possible reason for using buried timber more widely – timber 'dumps' have been suggested as a way to reduce global warming by locking up stored carbon. So perhaps we should be thinking: don't dump it – build on it. And with it. ■



Eastbourne pier – cast iron with timber decking



Slipway and moorings,  
Buckler's Hard



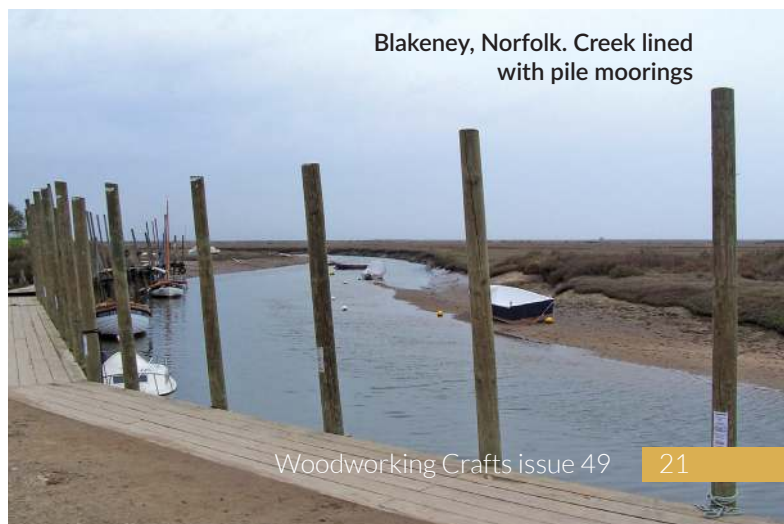
Cabin  
supported  
on wooden  
frame with  
rock infill



Lake Wabamun near Edmonton, Alberta Province, Canada. Walkway to landing area



Floating timber-decked pontoons



Blakeney, Norfolk. Creek lined  
with pile moorings



# Chisels

You can't create handmade joints without a decent set of chisels

**T**here are many different kinds of chisel for different jobs. Carpentry chisels, cabinetmaking chisels, sash mortise, skewed and corner chisels, slicks for timber frame building – you name it, there are chisels to suit particular tasks. Chisels vary in the metallurgical content and heat treatment of the blades, the shape of the blades and the way they fit into the handles – which can be made of different materials. We have decided to look at standard bench chisels because most tasks can be undertaken if you have a set of these. It can be more economical to buy a set but you may still need to add a very wide chisel for paring or a very narrow one for other tasks.

## Rider

This set from Axminster Tools is European-made with good-quality steel blades and hornbeam handles with leather washers to reduce the shock of mallet blows. Steel hardened to 59 HRC. The chisels come as a set, 6mm-25mm, or singly from 3mm-50mm.

Set £85.96

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

## Two Cherries

German-made, beautifully turned out chisels in a wide range of sizes, from 2mm-50mm. They have striking hoops and a unique handle profile. They can be bought as polished or unpolished blades for the same price. We recommend unpolished as polishing may look good but it rounds the edges, which isn't so good for precise work. Available from the Continent, buy now while we are still in the EU.

Set €95.90

[www.fine-tools.com](http://www.fine-tools.com)



## Irwin Marples

Irwin has no fewer than four types of chisel. The steel is the same but the handles and the intention are different. We love the older Splitproof M373 with see-through handles – they look good and they can still take a beating for carpentry tasks. A set of six from 6mm-32mm is available or singly from 3mm-51mm.

Set £75.00 (typical price)

[www.irwin.co.uk/tools/brands/marples](http://www.irwin.co.uk/tools/brands/marples)



## Narex

This set is just one of a range of different Narex chisels. Each has beech handles with pressed steel rings at the top end to take mallet blows. The steel is very good and holds an edge. The set has sizes from 6mm-26mm wide blades.

Set £74.75

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



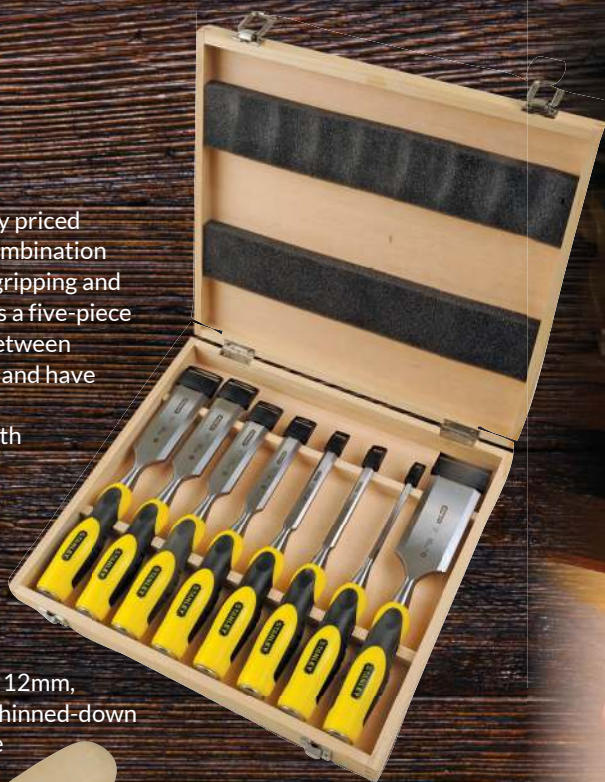


### Stanley

These Stanley chisels are economically priced and manufactured in Sheffield. The combination plastic and rubberised handles make gripping and using more comfortable. They come as a five-piece set or singly in a wide range of sizes between 6mm-40mm. They are pre-sharpened and have striking caps.

Set £40.00 (typical price) complete with sharpening kit

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



### Record

A set of four cabinetmaker's chisels 6mm, 12mm, 20mm, 26mm. European-made and with thinned-down bevel sides to help perform more intricate joint cutting and paring tasks, they come with hornbeam handles. Available singly from 6mm-50mm wide blades.

Set £49.99

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



### Veritas

Beautifully turned out chisels with durable PM-V11 steel alloy blades and sealed maple handles. Designed to cut accurate joints such as dovetails, they aren't cheap but they are fantastic to use. They can take heavy blows as well as perform finer tasks. Only available singly in sizes from 3/4in-1in.

Prices start from £69.00

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



### Sorby

Manufactured in Sheffield under Sorby's Sheaf River label, these chisels have a tapered bolster connection where the blade joins the ferrule and handle.

They feature top-quality blade steel and American ash for the handles. They come as a five-piece set or singly in sizes 6mm-19mm.

Set £141.00 (typical price)

[www.robert-sorby.co.uk](http://www.robert-sorby.co.uk)





# A tricky chair repair

The **Editor** says there are two vital lessons in life – learn to say no and don't rise to a challenge just because it exists...





A friend of ours presented me with a problem – a hoop-back Windsor chair where the hoop and all the back spindles had fallen out. Two spindles were broken – that should be easy enough to put back together? Er, well no. The spindle breaks presented a challenge – very slim turned oak sections that would be fairly impossible to refit with any intrinsic strength. Our friend said: ‘Don’t worry if you can’t do it. It is part of a set, but it really doesn’t matter if it is too tricky.’ Oh well, that is indeed a challenge. It must therefore be fixable.

**1** First very short break – the owner’s previous attempt hadn’t worked and it never would by glue alone. I wanted to see if the spindles were repairable or I’d have to turn new ones.

**2** The second, a slightly longer break, just possible to glue with longer grain. Both breaks probably occurred when the hoop fell off from being leant on heavily.

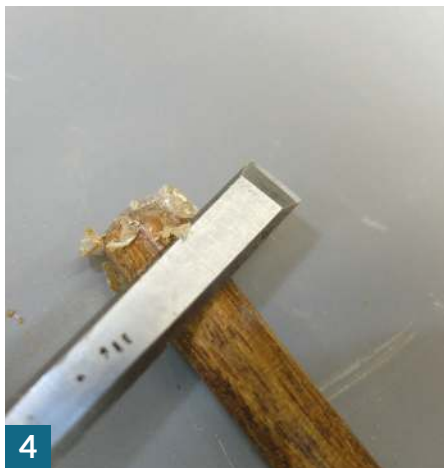
**3** The seat had been made from oak strips and must have split apart at some point in the past.

**4** First job – use the sharp side of a chisel to remove what proved to be epoxy resin from the broken spindles.

**5** After scraping back, which removed the finish as well, some reshaping on the disc sander created a reasonable joint meeting.

**6** I wanted to dowel the one with the short break, but the drill bit would slide off so I cut a flat step, which hopefully would stop any tendency to ‘wander’.

**7** Good so far, but the hole in the meeting face had to line up perfectly – slim chance. ➤







**8** Actually not bad. It helped drilling at slow speed but it looks like both halves will align quite well.

**9** I've really taken to using carbon fibre rod as dowel. This 6mm dia. piece being trimmed to length in situ will be massively strong compared to a beech dowel.

**10** Carbon fibre cannot absorb wood adhesive, so cheapo CA glue is the only answer, letting it run down into the wood around the dowel.

**11** Close enough with a little bit of artful reshaping. It's going to work.

**12** The spindle under pressure for 10 minutes showed a tendency to spring sideways, so a small, quick clamp just helped it stay straight until the larger clamp was released.

**13** First a fine-set bull-nose rebate plane to flatten across the joint, working all the way round.

**14** Then a wood file to restore the roundness, removing the faceting caused by the plane.

**15** 150 grit, then 220 grit papers and finally 320 grit foam-backed abrasive complete the remodelling of the short break joint.





**16** They'll never know how I did it – unless I tell them of course. A brown spirit dye blends the repair in very well.

**17** Next for the longer grain break. Scraping off the gunk revealed a second repair line – this wasn't looking good.

**18** All the hoop holes needed drilling out to remove old glue. That peg end of the second spindle break needed cleaning up for re-gluing.

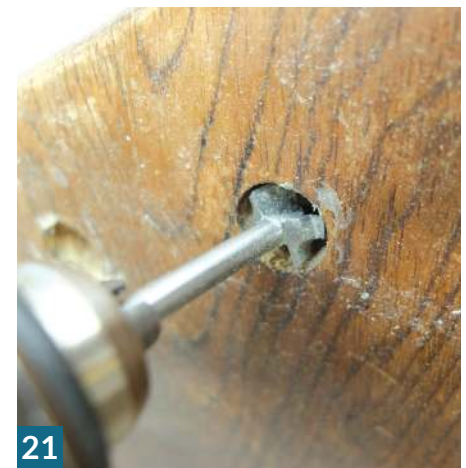
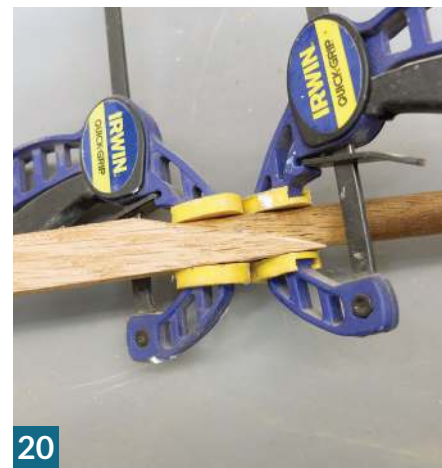
**19** The second repair – it just needed a little reshaping with a file. That's when it broke. A rethink needed on this one.

**20** The remaining peg end was removed from the chair hoop, the spindle was re-cut and a new square section end-sanded and glued on, this time the break being made even longer for a better gluing area.

**21** The chair seat spindle and hoop holes could now all be drilled out clean, ready for reassembly. There was also silicone around the holes which needed scraping off.

**22** While I was at it the repair strip was unscrewed and levered off. The seat was rock solid – this was one previous repair that had worked.

**23** Before re-fixing, a dry assembly to get each spindle in the right position was needed. The numbered spindles formed the hoop back and A (with the carbon dowel joint) and B (repaired but not yet fitted) were the support behind the hoop. The breakages show how important this rear pair are to the design. ➤







24



25



26



27

**24** The hoop ends would or should have had wedges in the existing kerfs but they were missing. All spindles were re-glued, then glue and slim wedges were banged into the kerfs to hold the hoop in place.

**25** The hoop assembly complete and ready to be re-coloured where the finish was worn or absent. However, the spindles seemed a bit sloppy at the re-gluing stage.

**26** It wasn't an antique and I didn't want to take any chances of

spindles falling out later on, when back pressure would be applied to the hoop back. An unconventional approach using 20mm x 18 gauge nails in a carefully aimed power nailer fixed the top ends without any splitting of the oak.

**27** A rub-down with Mirox webbing abrasive to give a silkier finish, followed by a dark, hardening wax completed the job. ■



Our friends couldn't believe I had actually managed to fix those breaks. They were thrilled with the result



# A Kickstarter campaign

Meet **Oliver** and **Greta Chambers** and their brand new creation

## Herston desk lamp

With the knowledge and experience gained from his years of working at Dyson and coupled with a longstanding family heritage in antiques and craftsmanship, Oliver Chambers' new premium brand, Herston, has a clear ambition – to make beautiful objects of our time. Items that people are proud to own and share for years to come. Greta brings her own experience of digital solutions and high-end design to the project. Thanks to a successful Kickstarter campaign they have financial support and enthusiasm from all quarters, so they are now in a position to begin production from their south London studio. The first product from the brand is an elegant and sculptural task light that combines high-performance technology with a classic modernist design aesthetic, creating an heirloom quality lamp that meets the needs of today's world.

Its unique self-balancing design, founded on pure engineering principles, enables effortless adjustment of the light in one smooth movement – on desk, table or bedside.

The innovative design uses conductive materials at each joint to eliminate cables from the base to the head, creating a clean and uninterrupted silhouette. Its slim, refined body is made from oak or walnut, cast iron and solid brass.

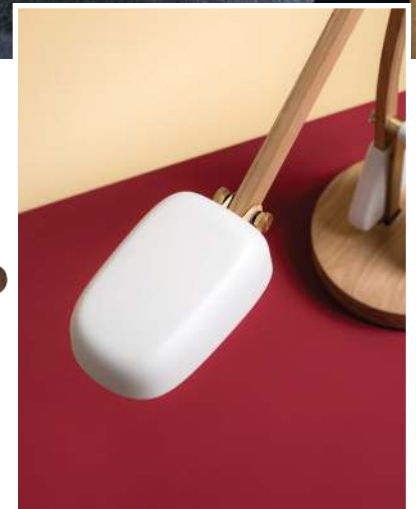
We wish Oliver and Greta success with their brave new venture.

[www.herston-uk.com](http://www.herston-uk.com)

Instagram: @herstonuk



PHOTOGRAPH BY DUNJA OPALKO





# Hourglass variations

**Philip Greenwood**

discusses templates needed for turning an hourglass and shows you how to make a version using contrasting timbers

**I**n this project you will need to make several items alike, so it will be good practice for copy turning. An hourglass is more of a decorative item, but it can provide entertainment in timing it to see if it is an hour in both directions – yes, it can vary slightly. You will have 10 parts to make for this design: two ends, two centrepieces for the hourglass ends to sit in, three spindles and six spindle end caps. Alternatively, it could be made in five parts for a simpler design by only drilling partway through the ends to locate the spindles, which means you have no end caps to make by missing out the two centrepieces. The centrepieces are made from a contrasting timber but you could use all the same timber throughout.

Hourglasses can come in several sizes, depending on the supplier you buy from, or you could buy an egg-timer kit instead and scale it down. This is glued together, so if it gets broken it will need several new parts turned. One option is to use mirror screws. These types of screws have a cap that covers the screw head, which is normally silver coloured. To use this type, only drill partway through the ends to locate the spindle spigot in 8mm and a small 4mm hole all the way through, then you could use mirror screws to hold the end on to the spindles.

I sit the hourglass ends on a piece of silicon sealant to stop it rattling in the ends. Remember that this is glass, so check the fit before you start gluing the parts together. My hourglass was made from ash (*Fraxinus excelsior*) and walnut (*Juglans regia*) for the two centrepieces and was finished using wax.



PHOTOGRAPHS BY PHILIP GREENWOOD



## PLANS

### Equipment used

10mm bowl gouge  
 25mm French-curve scraper  
 3mm parting tool  
 20mm skew chisel  
 20mm spindle roughing gouge  
 10mm spindle gouge with a fingernail profile  
 Cellulose sanding sealant  
 Cloth  
 Nylon pad or '0000' steel wool  
 Three-part buffing system  
 Bradawl  
 Drill  
 Variety of abrasives  
 8mm drill bit  
 PPE: latex gloves, face mask, respirator/dust mask and extraction

### Materials used

Ash (*Fraxinus excelsior*) and walnut (*Juglans regia*)

**Ash:** 210 × 40mm thick – two off ends

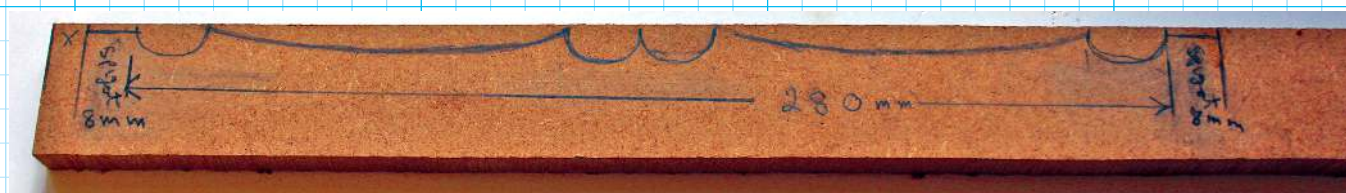
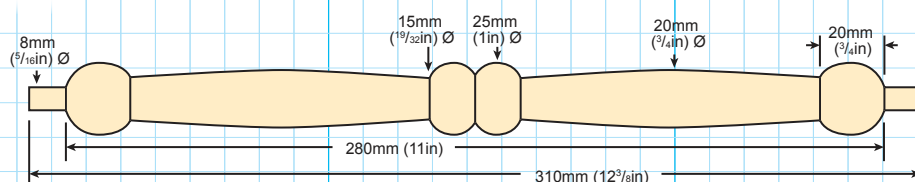
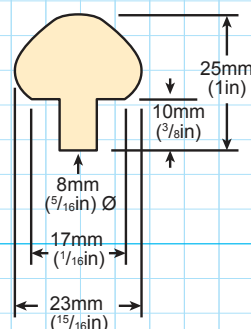
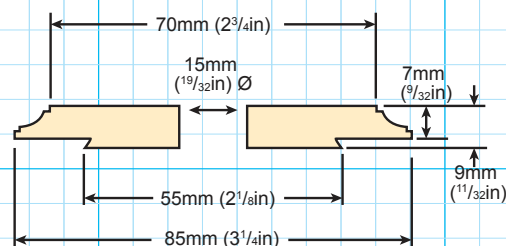
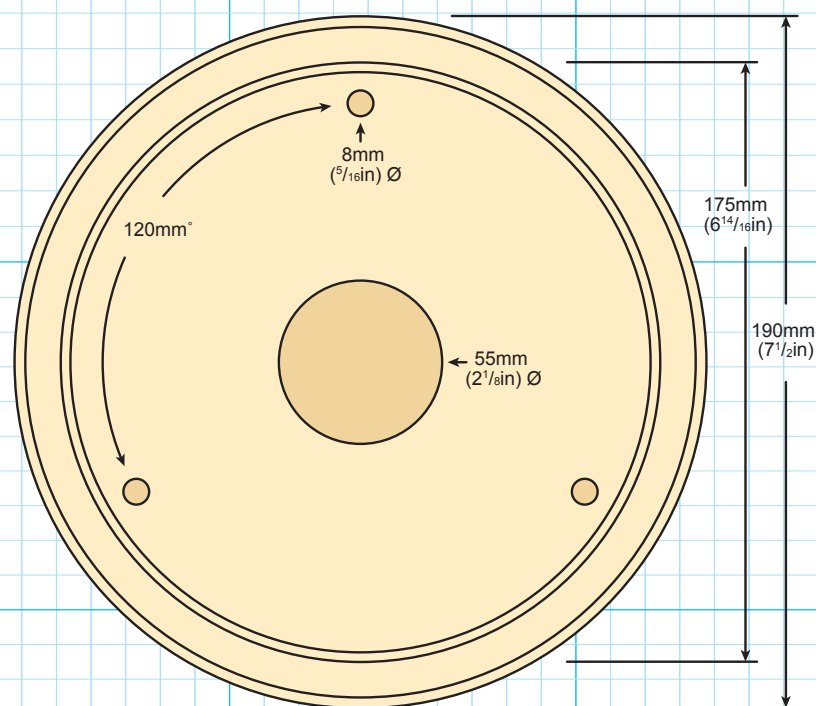
**Walnut:** 90 × 15mm thick – two off centres

**Ash:** 320 × 30mm long – three off spindles

**Ash:** 40 × 30mm long – six off end caps

### SPINDLE TEMPLATE

Here is a template which will allow all the spindles to be the same. You can start by drawing the spindle shape out on to this or, if you have turned a spindle first, transfer the entire dimension on to this. Like the overall length, the spigot length and all the details, you can also mark the diameter for each piece as well. This could be cut out to shape so you can offer this up to the spindle to check the shape, but I am using this as a pure marking-out stick. The template is cut longer than the spindle by 50mm. To use the template, just hold it against the spindle and transfer the marks on to the spindle with a pencil. This can be done while the lathe is running, providing that the spindle is totally round. Write the item name on this template



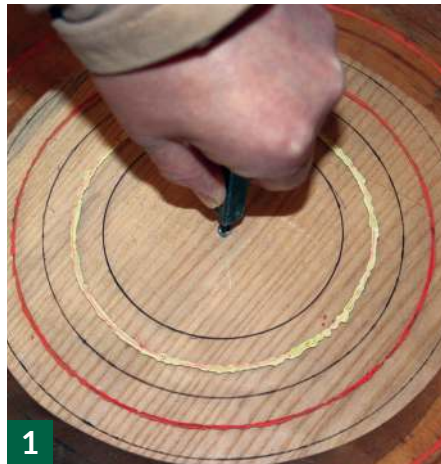


## DIVIDING THE PITCH CIRCLE DIAMETER

On the inside of the ends you need to mark where to drill the holes for the spindles. If you have an indexing facility on your lathe, lock the spindle in position 8, then attach the disc with the grain running vertical to the chuck. This will assist in making sure that the grain direction on both the top and bottom is running in the same direction. The first step is to mark the diameter that the spindles will sit on – this is called a PCD, which stands for pitch circle diameter. My PCD is 160mm, so I will place a mark 80mm from the centre, draw a full circle lightly so this can be sanded away when you have finished. Lock the spindle in position 8 with the toolrest on centre height, mark a line and repeat on positions 16 and finally 24. If your lathe does not have an indexing facility, use a pair of dividers. First, set the distance from the centre to the PCD, then place both legs on the PCD, swing the first leg round on to the PCD and mark. Continue this process until you have three equally spaced marks



**1** Start by marking the centre of both ends. Here I am using a large plastic jig with concentric circles to find the centre of the blank, then use a bradawl to mark. This will become the inner faces of the frame so choose the best grain pattern for the outside.



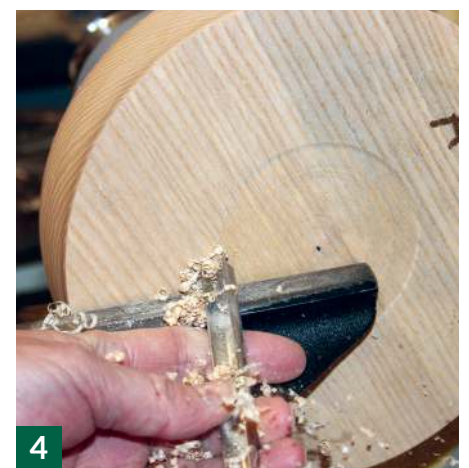
**2** The next job is to drill a hole slightly wider than the chuck jaws – this will enable the jaws to expand into this hole. When drilling with this size of drill bit, clamp the disc to the table as there is a risk of the bit grabbing and spinning the disc.



**3** True up the outside of the disc with a bowl gouge. This disc is larger than you need but you can remove the excess very quickly with the gouge. Leave this 5mm oversize on the diameter. It can be cleaned up later.



**4** Use a pull cut to remove the run-out – these discs do sometimes vary in thickness over the width or have warped, which can cause vibration. This operation will remove the vibration and allow you to see what the surface is like as well.



**5** This side will become the outer face of the hourglass so you need to add a spigot to hold on to, which will allow you to complete the inside face. Use a parting tool to cut down the side of the spigot, then remove the waste from here to the outside with the bowl gouge. Next, use the skew chisel to add the dovetail to the spigot.



**6** Lock the spindle in the number 8 position, then mount the spigot in the chuck with the grain going vertically. Do this for both end pieces so the grain direction will match when you assemble the frame. Remove the spindle lock, clean the top face to





thickness, then true up the outside to the correct diameter.

**7** Cut a recess with the parting tool – mine was 58mm diameter. This will enable you to finish the top later and also to fit the centre part of the frame. Clean the centre part out and dovetail the side with the skew chisel.

**8** Here you can see the completed centre. The circle is marked where the spindles will sit. It has been divided into three equally spaced sections using 8, 16 and 24 on the indexing facility. Mark the three points with a bradawl as the pencil lines will be removed when sanding.

**9** Add a small cove on the edge with a bowl gouge, then define the cove with the long point of the skew chisel. Use the skew chisel laid flat on the toolrest with the tool horizontal – do this slowly to avoid any grain tear-out. Sand this through the abrasive grits up to 400.

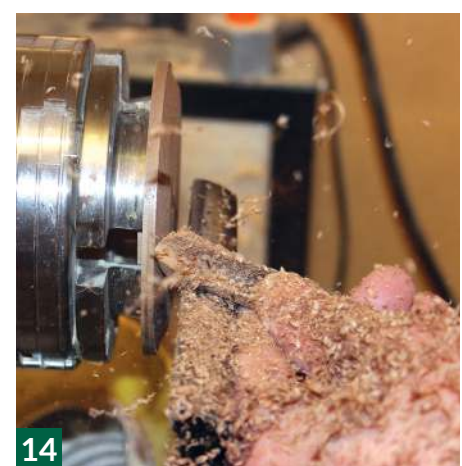
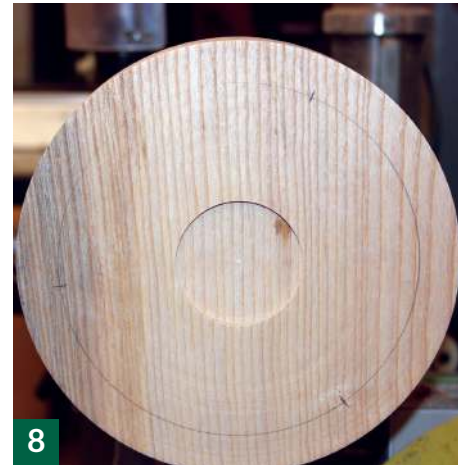
**10** Hold the disc in the chuck recess and remove the spigot, also reducing the thickness as needed. Repeat the detail as before. Sand through all the abrasive grits up to 400.

**11** Next, use a piece of scrap wood on the drill table and place a piece of anti-slip mat on this, which will prevent you marking the finished piece. Drill with an 8mm drill bit, then seal the surface of the timber – this will be buffed up later.

**12** Mount a piece of walnut on a screw chuck – here you can see I have placed a packing piece so the screw does not interfere when turning the front face of the disc. True up the outside of the disc followed by the face.

**13** Mark the spigot diameter that will fit in the recess of the ends you made in step 7. The spigot needs to be just deep enough to hold on the chuck jaws. These parts require no sanding as they will be glued to the ends.

**14** Here you can see this gripped in the chuck jaws. Turn to the diameter and thickness needed with the bowl gouge. To place a concave edge on this piece, use the long point of the skew chisel to place some detail at both ends of the cove. ➤





**15** Use a parting tool to make the centre hole larger – this needs to fit the metal plug on the end of the hourglass. Sand through all the abrasive grits, then apply sanding sealant.

**16** Mount a spindle piece and turn to a little over the finished diameter. With the lathe switched off, lay the template on the toolrest, line up with the right end and use a pencil to transfer the lines on to the spindle. The 280mm line is the distance that the spindles must be for the frame to fit together properly.

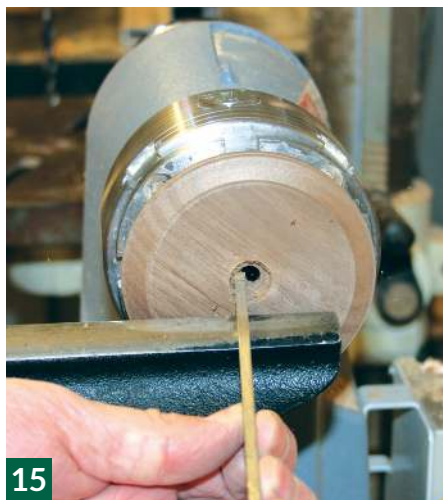
**17** Use the parting tool to part down to the correct diameter for each component on the main spindle, then turn the beads. Complete the detail at the tailstock end first.

**18** Use the skew chisel to cut the centre parts. Next, move on to the centre beads before completing the left end of the spindle. Turn the spigots on the ends to 8mm. Sand up to 400 grit, then apply sanding sealant, except on the end spigots. At the drive centre end, cut off the waste with a fine-tooth saw.

**19** Turn a piece of ash to a cylinder using a small template to mark the total length, which includes marks for the spigot length and the domed part. Sand and seal, then part off.

**20** Use the buffing system on all the components but try not to get wax on the spigots. When buffing, hold the work to the wheel at the lower portion.

**21** Glue the centrepieces into the ends and line the grain up. Glue the three spindles into one end and



add a small amount of silicon sealant into the centrepiece. Add the hourglass pack with cloth to hold the glass vertically, then the end piece. Let this set and add the feet.

**22** Your finished hourglass should look something like this.

## Finishing

For this project, I chose to wax the timber. Start by applying a cellulose sanding sealant on all the parts. This can be applied by cloth or brush

but always read the manufacturer's instructions. Once dry, denib with a nylon pad or '0000' steel wool, remove the dust and repeat if needed. More than one coat will be needed on more porous timbers. Then use a three-part buffing system but try not to buff any parts that will have glue on them. The first mop is loaded with tripoli and all the parts are buffed to remove any sealant marks. Then, the second mop is loaded with white diamond and buffed again. Once you have a smooth surface, move on to the carnauba wax. ■



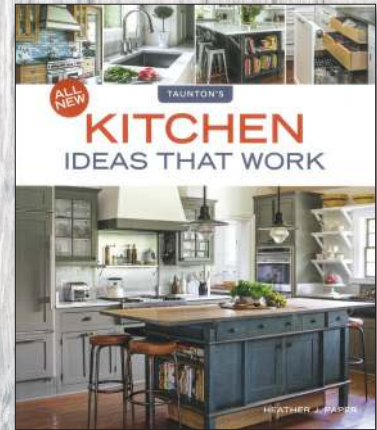
# BOOK REVIEWS

The **Editor** casts his eagle eye over two books that can help make your home complete

## All new - Kitchen – ideas that work

By Heather J. Paper

The first of two books reviewed here, which concentrate on the two most difficult rooms in any home, the kitchen and the bathroom. This one tells you everything and more that you need to know about kitchen design, needs and construction. It starts off logically by helping you determine your needs, which can vary a lot from one home to another. Then facelift or completely remodel and then determining a style followed by a budget and assembling a team of craftspeople to carry out what can be a complex job. Plenty of design options are shown with an emphasis on the cabinetry and fittings and of course the types of appliances. Plenty here to get your teeth into and make some sensible decisions that will give you a kitchen to last a lifetime.



ISBN: 978-1-63186-901-3

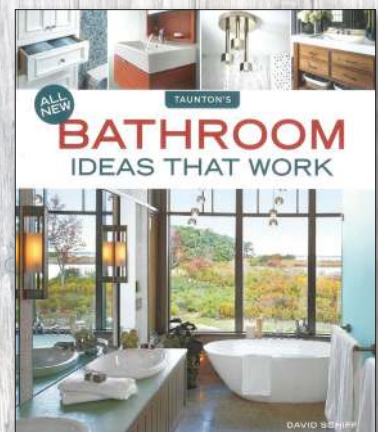
PRICE: £21.99

The Taunton Press

## All new – Bathroom – ideas that work

By David Schiff

Bathrooms are marginally less complicated to deal with. These days a bathroom is seldom just a bathroom. Chances are it will have a vanity unit, it may have a flat screen TV and it may have a full en-suite shower, bath or toilet. This leads to complexity in design and also installation and yet a bathroom doesn't want to be purely functional, but a pleasant, relaxing environment too. Again, this book starts in a logical order, defining the purpose, choosing professionals, making it work for all likely users and conserving energy and water. Mirrors also play an important part in making a bathroom appear more spacious than it actually is. The second chapter is concerned with showers and tubs (baths) the third with essential fixtures such as WC's and countertops and the last chapter is all about walls, ceilings and floors, creating a safe, waterproofed and pleasant environment.



ISBN: 978-1-63186-878-8

PRICE: £21.99

The Taunton Press

Both books are available from:

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

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# Making window sashes

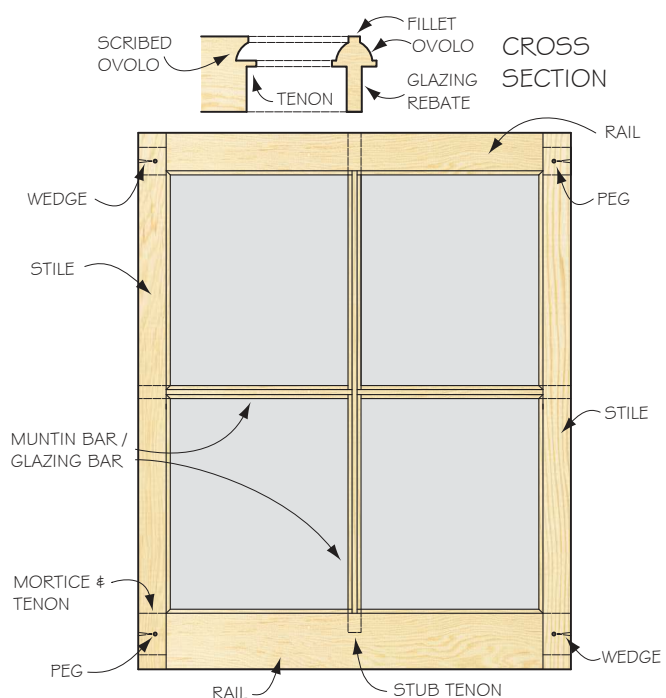
**Michael T Collins** enjoys a window of opportunity as he makes light of sash window construction

**O**f all the tasks of the joiner, perhaps no other has exacted the most skill and afforded the most income than that of the window sash maker. If you have never attempted to make a sash, I highly recommend it, if for no other reason than to test your layout, precision and organisational skills.

In this article I'll show you how to make a small, simple four light sash.

## Parts of a window sash

**Diagram 1** shows the basic parts of a window sash. General terms are: muntin bars, glazing bars (UK), muntin (US). ➤



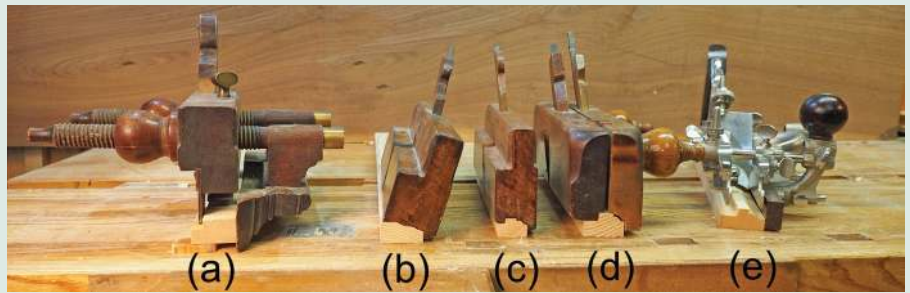


## A brief history of the sash

There are various planes that can be used to make window sashes. The most common are the English sash moulding planes. Plane (b) shows a common profile available at the end of the 19th century.

English methods required at least two planes to produce the profile. First, the glazing rebate was cut using a sash fillister plane (a), then the sash profile cut with a sash moulding plane (b). To make the muntin bars, the process is repeated a second time, giving a four-cut method.

American planes (c), (d) and (e) were designed to be far more efficient and cut the profile and glazing rebate at the same time. They were called stick and rabbit planes. (In England they are called stick



and rebate planes). Some of the stick and rebate planes are made in two parts with screws connecting the halves (d). These can be adjusted to change the width of the fillet.

In the image, the English plane (b) you often see a scratched line or 'spring' line on the end of the plane. The plane is held at an angle keeping the spring line

vertical while planing.

For this project I am using a Stanley 45 combination plane (e).

It should be noted that American planes, such as a Stanley 45, are much harder to use compared to the English sash planes, as greater force is required to propel the cutters through the wood, and harder still if the grain is unwieldy.

## The wood

**1** Traditionally, window sashes are built with stable, straight-grain wood, pine being the predominant wood in the US. However, any well-seasoned, rot-resistant wood with straight, close grain will work. Here I am making use of a really old Douglas fir scaffolding plank. Always check for any metal when using reclaimed wood.

**2** For the most stable wood try to pick quartersawn lumber. What you're looking for is wood that is knot-free, with end grain running perpendicular to the width of the board.

The mortise and tenon are the two basic joints in making window sashes, and throughout history the basic design of sash joinery is pretty similar both in the UK and US. Nearly all references agree that the joinery should be cut first before the moulding and glazing rebates are made.

## The parts

Rip and cut the parts to slightly longer than final dimension – plane all stock to width and thickness. Stiles should be at least 25-50mm longer than window height to allow for 'horns' on both ends – even longer if you are going to have fancy upper sashes. Rails should be sized to be just slightly longer than the window opening width.

During this dimensioning process you will have discovered the way the grain runs – you want the grain to rise away from you.

Label the parts and mark the face



and face edge clearly. Mark also the direction of the grain. If you get the grain right on one face it will probably be diving away on the other – hence the reason straightest grain wood is preferred.

## Dimensions and joinery layout

Create a 'story stick' with all the key dimensions of the rails, stiles and muntin bars. For this small window sash, the stiles are 30mm wide, the upper rail 40mm and the bottom rail 60mm.

I am using stock that is 40mm thick to match the width of my Stanley 45's cutter. This will give a 13mm glazing rebate, 9mm fillet and a 13mm ovolo profile.

## The frame

**3** Using the story stick, mark out the joinery locations. Transfer the joinery marks from the story stick to the rails using a marking knife and to the stiles using a pencil.

**4** Using the sash plane, produce a short test sample – it does not have to be a complete length of moulding, but just enough to get the location of the fillet.

Note: remember that the face side of the moulding is inside the house. All planing is done from the face side.

**5** Mark all the parts clearly.

**6** From the face side, set the mortise gauge to the width of the fillet



produced on the sample, in my case the fillet is 9mm. The distance from the mortise gauge fence to the nearest pin should be the total width of the ovolo profile determined from the sample. This way the intersecting mortise and tenon will fall exactly where the fillet is between the ovolo and glazing rebate.

Now, from the face side, mark the fillet width on the stiles (mortises) and rails (tenons).

**7** Chop both the through and stub mortises on the stiles.

**8** Saw the tenon cheeks on the waste side. Do not saw the shoulders as doing so would make it difficult to plane towards the end of the moulding, and sawing the tenons after planing would be difficult. Plane the sash moulding profile.

**9** The rail and stile mouldings can be planed by securing them in the vice. Alternatively, they may be placed between tail vice and bench dogs. Historically, joiners' benches were considerably longer than today's modern benches, enabling mouldings to be produced in great lengths – my bench is over 2m long and I can easily produce mouldings for most projects.

Using the sash moulding plane, apply pressure forward and into the workpiece to create the sash mouldings. Always start at the far end of the piece and take progressively longer shavings. Regardless of the plane you are using, it will bottom out when the moulding is complete.

**10** When you have planed all the frame mouldings, the profile can be burnished with the shavings produced. Now you can saw off the cheeks of the tenons and...

**11** ...adjust the fit accordingly. Go easy and pay attention to the gauge lines.

**12** cut the tenons to fit the mortises.

### Coping the stiles

**13** On the rails, at the mortise, cut through the ovolo about 9mm along the mortise.

**14** Now pare away the ovolo profile to the end of the rails. ➤





**15** On the stiles, using a chisel and mitre block, create a 45° slope on the ovolo portion by the inner side of the mortise.

**16** Use an in-cannel gouge of the same radius as the ovolo portion of the sash. The idea is that the scribed section of the stile cups over the portion of the ovolo you left on the rail.

**17** Test the joint. From the front the scribed joint looks like a 45° angle.

### The muntin bars

The muntin bars, or glazing bars, are 20mm x 40mm.

The vertical muntin is a solid piece running between the top and bottom rails and, depending on the dimension of the two rails, will have either through or stub mortises. My sash has a through mortise in the top rail and a stub in the lower rail.

Carefully chop the through mortise in the middle of the vertical muntin from both sides.

The muntin bars are very thin and planing them requires a device called a sticking board (sticking is the term used to plane mouldings).

### A sticking board

**18** A sticking board is a very simple device. From the photo and from the diagram it can be seen how a sticking board is made. A flat-head screw keeps the wood from advancing.

One side is planed and the piece flipped end-to-end and the other side planed.

**Diagram 2** shows the relationship of the sticking board, using the four-cut method.

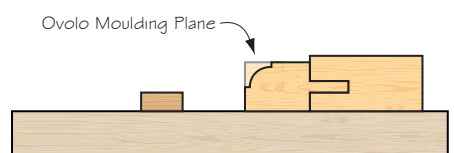
**19** An alternative to making a sticking board is to batch-process the muntin bars by cutting a piece of wood 80mm x 20mm and then planing the muntins two at a time. Here I am holding the stock between bench dogs.

**20** Once the planing is complete...



**21** ...slice the board apart using a cutting gauge. This is easily done as the board is only 3mm thick. Then plane the cut edge.

THE FOUR-CUT METHOD





## Scribing the vertical muntin

**22** With the muntin bars held in a bench hook, cut the shoulders of the tenon to length on both sides down to the fillet. In the image, I have highlighted the sections to be removed. Because I used a Stanley 45, the two shoulders, if viewed from the side, will be aligned.

With a chisel remove the cheeks from both sides of the tenons up to the shoulders.

**23** All that remains to do now is mitre and scribe the muntin bar tenons to fit over the upper and lower sash moulding. This is a repeat of the method we used to scribe the stiles earlier, except we mitre and scribe from both sides.

## Horizontal muntins

**24** The short, horizontal muntins are measured and cut to length. The tenons that mate with the vertical muntin will have stub tenons about 9mm long.

Then the ovolo is mitred and scribed in the same way as the vertical muntin bars previously.

## Putting it all together

**25** Traditionally sash windows were never glued. To finish, simply clamp the sash together and then, with a chisel, create a kerf in the end of each tenon and drive a wedge in.

**26** Additionally, strength can be achieved by using 6mm pegs through the tenons. On some of the older sashes I have the stub tenons were pegged with 2mm pegs.

**27** Cut off all the wedged tenons...

**28** ...and plane flush.

**29** Now all that remains is to saw the horns off. The bottom horns on the upper sash may be shaped for decoration.

Prime, glaze, install and enjoy the view through your window sash, knowing that you have now produced something that few woodworkers have attempted. If you want to make a six or nine light sash, bear in mind that you will have to cope (pun intended) with a lot more organisation and precision – and at times frustration. ■





# KITTED OUT

Take a look at the gadgets and gizmos that we think you will enjoy using in your workshop

## Bosch 18V cordless impact drivers for professionals

The GDR 18V-200 C Professional Impact Driver and GDX 18V-200 C Professional Impact Driver/Wrench. Compact, powerful and easy to use. Flexible and efficient in confined spaces and hard-to-reach areas. Both tools have a maximum torque of 200 Newton metres and feature short head lengths of 126mm and 147mm respectively. The cordless impact drivers tighten common screws of size 6 x 60mm fast and recoil-free as the torque at the bit or screw is decoupled from the handle. The cordless impact drivers differ by their toolholders. The new generation of the Bosch GDX 18V-200 C Professional also has a combined hexagon/square toolholder so screwdriver bits and nutsetters can be used.

### Features

Comes equipped for the Bosch Toolbox App. Fast and efficient screwdriving with three pre-set speed settings. The preselected speed minimises the risk of over-tightening and snapping screws according to size, plus the accelerator switch regulates the power.

Both models are equipped with brushless motors for a longer lifetime and can accept the new powerful, compact, high-performance ProCORE18V 4.0 Ah 18V lithium-ion batteries.

[www.bosch-professional.co.uk](http://www.bosch-professional.co.uk)



### Example prices from the range

GDR 18V-200 C Professional Impact Driver – no batteries, no charger, carton box £198.00

GDR 18V-200 C Professional Impact Driver – 2 x 5.0 AH batteries, GAL 1880 CV charger, L-BOXX £456.00

GDX 18 V-200 C Professional Impact Driver/ Wrench – no batteries, no charger, carton box £210.00

GDX 18V-200 C Professional Impact Driver/ Wrench – 2 x 5.0 AH batteries, GAL 1880 CV charger, L-BOXX £480.00



## Stay warm with Clarke cast iron stoves

Nothing beats the warmth and ambiance of a real fire in your home throughout the colder, wet months of the year. Clarke cast iron stoves are currently available at Machine Mart to buy now and install ready for winter.

The Buckingham is a classically designed multi-fuel stove which will add a sense of timeless style to any modern or period room. Suitable for burning wood and coal, this stove is efficient and stylish. It has a maximum heat output of 6.0kW, making it suitable for rooms up to 120m<sup>3</sup>. Price £238.80

The Wentworth is a stylish, contemporary, highly-efficient multi-fuel stove, which has passed government DEFRA tests to demonstrate exceptional clean burning of wood in smokeless

zones. It has a maximum heat output of 5.3kW, making it suitable for rooms up to 100m<sup>3</sup>.

Price £358.80

All cast iron stoves at Machine Mart benefit from an air-wash system, helping to keep the glass clean and soot free. They also feature air control to alter burn rate/heat output and all conform to BS/EN13240 and CE latest standards.

### Also available

Everything you need for stove installation, including an extensive range of enamel and stainless steel flues, connectors, cowls and chimney liners and a huge range of accessories.

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



## Trend sawblade

Meeting the demand from end users for an affordable, high-quality alternative blade for DeWalt's DCS577 Flexvolt Worm drive cordless saw, Trend has introduced a 24-tooth, 184mm dia. blade which can be used in both the US import and UK release machines.

The sawblade can be used as a standard  $\frac{5}{8}$ in bore to suit the traditional circular spindle drive saws. The unique feature is the 'knock out' centre which, when removed, gives the unique diamond pattern bore required with the DeWalt saw.

Its 1mm plate thickness and 1.6mm kerf ensure fast cutting and reduced battery strain for longer machine run times. Alternate Top Bevel + Raker tooth design and 25° rake. Ideal for medium/coarse, fast-cut ripping and crosscut work in 'first fix' type applications. Anti-kickback design offers safer, fast cutting in all timber-based applications, suitable for hardwood, softwood and man-made materials.



Worm Drive Blade  
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[www.trend-uk.com](http://www.trend-uk.com)

## New Falcon and Apollo from Solid Gear – high-tech safety boots for winter months

With a focus on comfort and S3 safety, Solid Gear's Falcon and Apollo boots are probably the most robust boots you can get for the winter months. Durable uppers will keep your feet dry and insulated so you can work comfortably in the roughest conditions on site. The new oil and slip-resistant Vibram soles deliver outstanding grip on snow and ice.

The Apollo has premium full grain impregnated leather uppers while the Falcon is a mix of full grain leather and a Cordura Ripstop fabric. Both boots deliver better water repellency and breathability than many other boots and their fibreglass toecaps feature multilayer technology for a roomier toe box, while the new thinner and stronger composite plates add flexibility. Falcon £98.68 Apollo £107.14 (both are VAT exempt)

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



## MINI TEST



### Axminster Rider Double-Sided Diamond bench stone

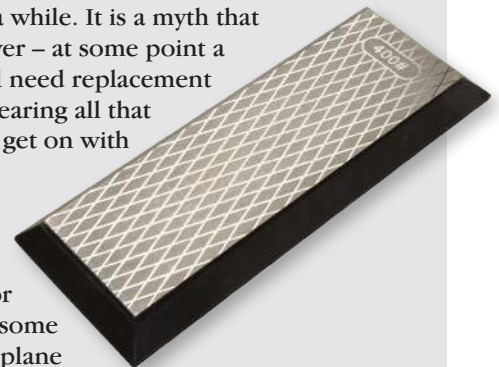
There are expensive diamond stones and there are cheaper ones, such as this Rider stone. There has to be a difference – a cheaper item may suffer quality control issues and I note the reviews on the Axminster website, the majority of which are, in fact, positive. The plate itself needs to be flat – mine was. The diamond coating is laid in a diamond pattern, which does give somewhere for the slurry to go. It is important to remember that any new diamond stone is quite rough to begin with and may give a faster but rather coarse edge. The grit will work at its best once the surface has been used for a while. It is a myth that diamonds are forever – at some point a diamond stone will need replacement after a lot of use. Bearing all that in mind, how did I get on with my example?

### Verdict

The 400 mesh side proved excellent for giving a regrind to some of my heavily used plane and chisel blades, albeit giving a scored edge due to its newness, but improving as I worked through my toolkit. The 1000 mesh side I used to flat the backs of various blades before honing the bevels. Being so new it was still a little harsh – again it got better with use. I know many people would like a finer grit still, but my preferred route is then to use a strop with metal polishing paste. This not only removes the burr but gives a high shine to the cutting edge. At this point I got the keen cutting edges I needed.

Overall, a good basic stone with a non-slip rubber mount that now stays on my bench all the time.

Rider Diamond Stone –  
code 951777  
£37.96  
[www.axminster.co.uk](http://www.axminster.co.uk)





PHOTOGRAPH BY BRENDAN DEVITT-SPOONER



# The house that Brendan built

Every woodworker's dream – a self-designed house right next to a really big workshop. By **Brendan Devitt-Spooner**

## I dreamed a dream...

Like many woodworkers and furniture makers, having my own workshop or shed where I could create my work was a dream when I first started out as a furniture maker 30-odd years ago. My first workshop was a converted plant nursery building that I rented for 18 years. During that time I extended it twice and took over a lot of space around it to accommodate my ever-increasing equipment and timber stocks. During that time, I was always on the lookout for a freehold workshop which would be mine and not subject to rent increases or neighbouring vehicle workshops that did not fit with the 'romantic' view of a woodworking shop that was producing handcrafted pieces of furniture.

## Through the grapevine

After many fruitless attempts to buy a workshop or piece of land in my area, I fortuitously heard through the grapevine of a workshop sitting in half an acre of land fronting a main road that was up for sale. Within 18 months I was in and making furniture in a 2000sq ft workshop with space for my ever-increasing timber stock.

## Contemporary design

Many people will own a house and dream of squeezing in a workshop or large shed to allow them to work from home, with all the benefits that go with it. My story is the other way round. I had the workshop, but I wanted the house to go with it. With enough land to site a house, my wife Laraine and I spent many months playing with ideas and designs for a house. We both wanted a contemporary build using different materials and timbers that would sit well with my furniture. It would be light, have an open-plan ground floor and be quite angular. After the inevitable tussles with the planning department we were eventually granted planning permission and work began at the end of June 2017.

## Split level

Essentially the house is split over two floors. The ground floor, which is mostly open-plan, comprises a kitchen with an attached utility room. The kitchen opens on to the dining room, which in turn leads into the sitting room. There is an entrance hall which will soon have a triple sliding-door

PHOTOGRAPHS BY GMC/ANTHONY BAILEY EXCEPT WHERE OTHERWISE STATED







cupboard for coats etc. Off the dining room is a study which could be used as a downstairs bedroom should we be unable to make it up the stairs in the future (plan ahead – Ed). There is also a downstairs wet room and an entrance to the attached garage.

### Staircase and atrium

The open staircase leads from the dining room through a double-height atrium to a large landing, from which there are bedrooms, a family bathroom and numerous cupboards. Although we arrived at a design we liked, we passed our drawings to the in-house architect of the building firm we used to make sure everything would work and that it complied with all the current regulations etc.

### Groundwork

The house is quite conventional in construction. The blockwork cavity walls sit on a beam-and-block floor which, in turn, sit on concrete foundations. Because of numerous neighbouring trees in adjacent gardens the foundations are a whacking 2.4m deep, which necessitated a not ➤



Brendan's generously large and well-organised workshop



inconsiderable quantity of concrete. The two roofs are slightly inclined and are constructed from engineered beams and covered in external grade chipboard, which is covered in 125mm of Celotex insulation and then a rubberoid membrane. All the fascias and guttering are in aluminium.

### Windows and doors

The windows and doors were also in aluminium, as they would not need any maintenance bar cleaning, but mainly because the components are slim and therefore would allow more light in.

### Interior fit

The whole construction was undertaken by the builders, but I was determined to put my bit into it. This took the form of all the interior woodwork, excluding the floor. Ash was the timber I used. I like the lightness in colour but also the variation of colour and tone. It was also something to do with the fact that, three years prior, my son and I had felled a dozen ash trees that had been converted into various thicknesses and they were now air-dried.

### Brendan's ash

I used six of those trees for all the work, which comprised six feature doors, 10 'ordinary' doors and 11 wardrobe doors, all the door linings, all the architraves and door stops and all the skirting, which I think totalled more than 200m. And the pièce de résistance – the staircase, which had infills of ilex oak.

### Too many demands

Naively, at the beginning I thought I would be able to breeze through the making of all the components but the demands

of running my business at the same time meant that most weekends were spent machining timber, cutting joints and finishing. An added pressure was the fact that the builders would need parts of the woodwork in, to allow other trades to carry on with their work. The notable event was making, assembling and fitting of all the door linings.

### Dry linings

All the timber had to be 'well dry' as parts. The door-linings would be butted alongside plastered walls and the thought of the timber moving and affecting the plaster was not something I wanted to explain to the plasterer. The architraves and skirtings were all machined with simple chamfers.

### Art for art's sake

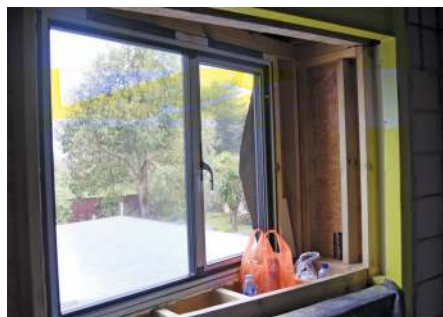
The feature doors were based upon the work by Piet Mondrian. I love his white panels framed by black lines with primary colours dotted around. Each door would have a single colour panel. All the panels were 16mm maple-faced MDF. All the doors were conventionally constructed using mortise and tenons and grooves to accommodate the panels.

### Treading carefully

The staircase was interesting. Essentially a steel frame was built into the wall. This had steel projections welded on, upon which the tread 'sleeves' would be fitted and glued into position. Never having made a staircase before, I was competently led by the builders, who had fitted similar ones before. The sleeves are basically two wide, flat pieces joined by two narrower ones. The three corner treads had to be made from a template to establish the correct shape. They were made with a tolerance of 5mm for front to back



Stopped chamfer detail on the ash doors



Upper storey windows angled out to avoid overlooking neighbouring property



Some of the complex studwork to create the interior room spaces





The dynamic, open-plan ground floor layout



Some of the unusual details on the front and interior doors

and 16mm for the vertical dimension. The ends were filled in with a sandwich of end-grain ilex oak. This tree, which I took down more than 20 years ago, was stunning when cut – most of it is blood-red and black, presumably a result of the soil condition. I have some of the timber left, from which I will be making a dining table for the house.

### Built with skill

Unlike many 'horror' moments one sees on housebuilding programmes on TV, we came through the whole process unscathed. If there were any difficulties they were deciding on all the options that were available. Whether it was tiles, door handles or lighting, the range was huge and decision-making was time consuming. One aspect of the whole build which I found rather humbling was the incredible ability of the carpenter who did much of the work, which is now unseen, and who also fitted all the cedar cladding. Whereas I routinely have access to dedicated machinery for much of my work, he worked out of his van with hand tools and a range of power tools, but the quality of his work was superb.

### A dream completed

In conclusion I have to say that I really enjoyed the experience. We live in a beautiful house that is a short walk away from my workshop. The only downside is that my wife gets fed up with me popping home for lots of cups of tea. Hey ho...

(We are all really, seriously envious here – Ed) ■



PHOTOGRAPH BY BRENDAN DEVITT-SPOONER

Glass panels finally fitted to the ash-boxed staircase



PHOTOGRAPH BY BRENDAN DEVITT-SPOONER

Brendan and Laraine's dream home by night



# Makita compound mitre saw

The **Editor** tries out a big Makita saw for big work

**T**his machine is the latest offering from Makita, which is known for its extensive range of professional power tools. Let's start by saying it is big, heavy, precise and expensive. That's the test done? Yes, if you just look at the headline stats for this beefy bit of kit. However, there is real-world testing which can throw up a few issues with any machine, however well-spec'd it happens to be.

## Big, heavy

It is big and I don't recall the very large box suggesting it should only be a two-person lift, which it is. Get it out of the box and it doesn't get any easier to manhandle – again two people required to haul it around. So the first comment is, it needs a wheeled base for site use. In the workshop it can be semi-permanently mounted. Indeed, it is intended for bench fitting as a

key feature are the fixed slide tubes on which the motor head moves, thus reducing the back distance from a wall. There is a version fitted with a laser also available.

## Blade and motor

The blade is a large, 305mm, 72 tooth TCT coupled to an 1,800W 240V motor (1,450W on 110V model). I can tell you now that the blade is excellent quality, giving a virtually planer finish, albeit with a very faint but interesting surface pattern that didn't bother me. The motor and blade assembly aren't noisy, considering how big they are. There is the inevitable safety lock button and squeeze trigger to lower the head and cut. The clear blue guard follows and will rise to sit on a workpiece as you push the cut forwards. Please note that any crosscut saw must be pushed

to cut, not pulled towards the user, especially with such a big, dynamic piece of machinery.

## Crosscutting

So crosscuts are great, the head unlocks to rise into normal plunge and cut position by a pull-and-turn knob on the right-hand side. Cutting an angle is done using the usual rotating turntable with a large grip-and-twist lock knob for intermediate angles, a press lever for unlocking and another for clickstop locking at all standard settings. There are adjustable plastic kerf plates to set around the blade. To be blunt, these won't do anything useful, although manufacturers have to fit them. They are set fractionally lower than the finely milled aluminium turntable





and spelching (breakout) will occur topside, not underneath, because the cut action is like an inverted tablesaw. Instead use the rather slim, awkward height adjuster to bring the teeth halfway through the underside of the workpiece for the smoothest result. There is an engageable trenching stop and flip stop to restrict rear movement if you fit facings on the rear fences. These do not slide, thus avoiding accidentally restyling the nice aluminium surfaces, they simply lift off.

## Bevel cutting

So far, so good. Bevel cutting is always a tricky one, really useful for things such as skirting cuts or inverted cornice mitring and the angle can be set at up to 48° left or right to account for unsquare walls etc. The trouble is this saw head is big and heavy and, with the fixed tube pushover cut arrangement, it has obviously taxed the designers' ingenuity. There is a large grip knob at the front left on the tube assembly, styled liked the turntable grip knob. However, you need to unlock the bevel tilt lock at the right rear.

I don't like this pull and twist lever, it is at right angles to its lock pin so it can drag when trying to pull it out. If you want to bevel to the right, there is a sprung lock button to press on the left and then if you want to go past 45° either way there are twin, sprung pull levers that need a little coaxing to operate. It all boils down to the sheer weight of the saw head. You end up with some juggling of it, while operating a lock and loosening and tightening the grip knob. Practice makes it easier.



Making a cut is a very smooth affair



The push button for right bevel cut setting



Tightening the bolt holding the guard centre plate

## Blade changing

The guard has the usual safety pressing around the bolt that prevents the centre of the guard from coming loose. Undo the bolt enough and the guard lifts high enough to fit or remove the blade using a supplied Allen key and spindle lock. I used gaffer tape to hold the guard out of the way as there isn't a clever way to lock the guard up.

## Dust extraction

I don't know of any compound mitre saw, alive or dead, that satisfactorily extracts all sawdust. It's pretty impossible, although custom shop-made solutions can fare a bit better. Makita's answer is two rubber spouts, one behind the blade and one in front of the rear bevel tilt. As you change angles these two compress together, which doesn't improve their chances really. Extraction with a high-pressure auto extractor is 'fair'.

## Verdict

It's a great saw, literally. It will do the job perfectly, but on such a big saw the bevel setting and locking gets awkward – not its best feature. However, if you want a big, meaty machine that cuts like a dream, then perhaps you ought to splash the cash. ■



The squeeze trigger and lock button



The ratchet-action bevel locking knob

## Tech spec

Model on test: LS1219  
Input Wattage: 240v -1,800w / 110v -1,450w  
No Load Speed: 3200 rpm  
Blade Diameter: 305 x 30mm bore  
Max mitre range: 60 - 60°  
Max cut at 90°: 92 x 382 mm  
Max bevel range: 48 - 48°  
Net weight: 29.5kg  
Typical prices:  
£1080/ £1110 (laser version)  
Visit: [www.makitauk.com](http://www.makitauk.com)

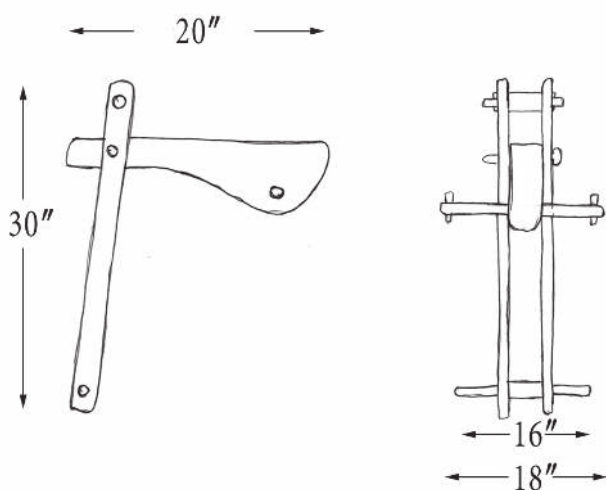




# Lap and stick shaves

Sometimes the simplest devices are the best

**T**hese devices are similar to the shave pony, with the added advantage of not needing a bench to clamp them to. These are the ones to pack into your rucksack so you can shave your wood wherever you are.



## LAP SHAVE

I first came across this design of horse on the APTGW Bodgers' Ask & Answer forum, where my friend Robin Fawcett shared an article about a Bodger's Bord, made by MW Cuddy. Robin also shared his own version. The original internet article no longer exists, but a plan drawn by MW Cuddy can be found on the forum. Robin once used his lap



Robin Fawcett using his Bodger's Bord

shave to make a spoon during a live broadcast on top of the Fourth Plinth in Trafalgar Square, as part of the One & Other project conceived by Antony Gormley. The broadcast was shown and shared widely on the Internet.

The lap shave horse is light and small. I made my version of the design from green wood, turning my own dowels, and it works surprisingly well. The lever frame acts as legs would, stopping the platform from dropping between or over your own legs. The platform wedge is removable and can be positioned along the bed. It has a dowel in it that can be inserted into holes in the bed.

This means that fine adjustments can be made between the platform and the top jaw to accommodate different sizes of billets. The lap shave in the picture (above) is a bit rough and ready – the rope to hold it against your body tends to slip off the cross dowel. Of course, there are a multitude of solutions, including using belts and heavy-duty clips. The next version



Robin's lap shave

I made had a one-piece bed and the platform was split from a large-diameter log.

PHOTOGRAPH BY ROBIN FAWCETT





Lap shave open



Lap shave folded

## STICK SHAVE

The simplest shaving horse I have seen is a stick shave. I first saw one that Dale Horton was using, when busking with his willow flowers. It was made from only three sticks and a length of cord.

In this design, the largest stick is 2-3ft long, with a minimum of 2in diameter. The two other sticks are  $\frac{3}{4}$ -1in diameter, and at least 12in long. This device will only work when you are sitting down on a stool or chair, at least 16in high. The sliding footrest has a length of cord tied to it, either side of the main stick or bench. The loop that this forms is inserted through a small hole near the top of the device. The workpiece is pushed through this loop and held by it. As the worker pushes the footplate down, the loop is shortened and the workpiece is gripped firmly. It is not the best shaving device as it can be awkward when turning wood around end to end. However, it does have its uses, especially in shaving the ends of sticks.



Stick shave

**1** To make the bed of the stick shave, choose the fattest end of the largest stick and mark a line around the circumference, 3in from the end. Mark another line 7in from the end. Drill two holes of 1in diameter, all the way through the stick, on these lines. The holes must be in line with each other. Chisel out the wood between the holes to make a slot that is 1in wide (it will be 4in long). Take one of the sticks that measures 1in wide by 12in long, and insert it into this slot. This stick serves as the footplate at the bottom of the stick shave – it must be able to run freely along the slot.

**2** Mark a line around the circumference of the large bed stick, about 6in from the top. Drill a 1in hole all the way through and insert the third stick. This needs to sit firmly in the hole so it does not fall out. This is the part that will sit on your thighs.

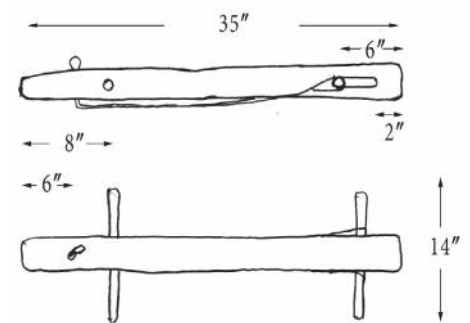
**3** Drill a  $\frac{1}{2}$ in-diameter hole in the bed stick, 8in down from the top end through the top side, at right angles to the holes previously drilled for the footplate. A cord will pass through this hole so it is a good idea to bevel its edges to prevent damage.

**4** Shave the top of the bed stick to provide a level and flat platform for the workpiece to sit on.

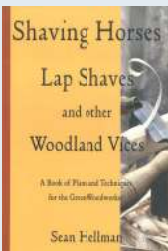
**5** Cut the cord to length, allowing enough to pass through the prepared hole and to tie around the



Ollie making flowers on the stick shave



footplate. Fold a length of cord in half and insert the loop through the hole from the underside of the stick. Place a smallish stick through the loop so that the cord cannot be pulled out of the hole. Take each end of the cord and tie these ends around the footplate on either side. ■



### Shaving Horses, Lap Shaves and Other Woodland Vices

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# NEWS & EVENTS

All the latest events and news from the world of woodworking

## Best Use of British Timber Awards

**W**oodland Heritage's Best Use of British Timber Awards at the Celebration of Craftsmanship & Design exhibition aims to promote the use of local resources to produce pieces that have added meaning beyond their basic function.

Held annually in Cheltenham and heralded as 'the UK's largest exhibition of contemporary, bespoke designer-maker furniture', Celebration of Craftsmanship & Design, like Woodland Heritage itself, is looking forward to its 25th anniversary next summer.

The award is open to all exhibitors, with more than 70 this year, and judged by a panel during the show, with the criteria including design, species selection, use of timber, craftsmanship and provenance of the wood used. Points are awarded to entrants who go out of their way to source timber locally and/or find out where their timber comes from.



'Grace' circular table by Daniel Harrison Furniture

This year's winner of the Best Use of British Timber Award was 'Grace' circular table by Daniel Harrison Furniture of West Glamorgan. The judges said of the piece: 'This beautiful circular table stood out immediately. The figure on the top is just stunning to look at and also to feel – very tactile.'

'The unusual fluted underframe demonstrates great craftsmanship and design. It seems fitting to have ash standing out at this point in time when we are losing so many of our native ash trees to Chalara.'

Ash is Daniel's favourite timber and as such he wanted to show as many varieties within this piece as possible – olive ash for the top, ripple ash for the base and the use of laminated, native Welsh ash for the spokes of the base structure.

Daniel commented: 'With the onset of Chalara ash dieback I thought it important to raise awareness of and celebrate one of our finest native tree species.'

The ash used for this project was sourced from Andrew Williams at A W Hardwoods within a 10-mile radius of his sawmill in Swansea, South Wales, just down the road from Daniel's workshop.

Highly commended in the award was 'Corvus', by Beneath the Bark, about which the Judges said: 'A curvy version of a classic chest of drawers.'



'Corvus' by Beneath the Bark

The use of Scottish burr elm on the drawer fronts is very dramatic.

'Elm is a beautiful timber and its natural beauty has been exhibited by this piece; even the back has a dramatic grain.'

Tom Jones, of Beneath the Bark, combines making furniture with working for a commercial timber yard in rural Suffolk.

The two winning entries both used timber that, due to disease, is either currently hard to source in the UK (elm), or is likely to become increasingly so (ash), highlighting the value of Woodland Heritage's continuing drive to nurture the UK timber stocks of tomorrow for the furniture-making industry.

More details about next year's exhibition will be announced shortly: [www.celebrationofcraftsmanship.com](http://www.celebrationofcraftsmanship.com)

For more information about, and ways to support, Woodland Heritage: [www.woodlandheritage.org](http://www.woodlandheritage.org)



## Reader letter

*Hi Anthony. You've done me a real favour. In the last issue you tested the Triton Superjaws XXL which I bought several months ago and almost instantly regretted because it is so big and heavy. The handle is essential for getting it ready for action but it is hard to move around. Your suggestion for making wheels got me thinking and here is my solution. I used a couple of small, nickel-plated Record G-clamps, a block of 3x2 softwood and two fixed, non-swivelling castors. It is now really easy to pull my Superjaws around. I will try to find bigger wheels to negotiate uneven ground, but apart from that it works really well. I just detach the wheels wherever I'm ready to get set up. By the way, the Superjaws is a great piece of kit once it's in use – it has a really powerful grip.*

**Len Burrows**



Ready for lift-off, the wheelset is removed for setting up the Superjaws

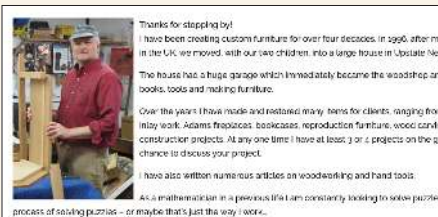
The wheel assembly clamps to the front vice jaw, the recesses give the clamps ground clearance

## Web links for you

### Website

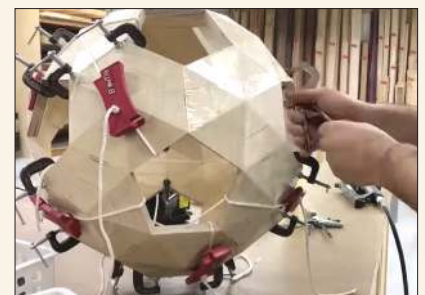
[www.sawdustandwoodchips.com](http://www.sawdustandwoodchips.com)

Our very own Michael T Collins has a very well developed website with plenty to see and read, including his past articles from *Woodworking Crafts*. His regular postings with useful techniques and tricks are worth checking out.



### YouTube

Guy makes a big ball out of plywood. Exactly what the title says, but you still have to watch it to believe it.



### Facebook

#### Special interest groups

On Facebook you will find a number of woodworking groups that might interest you. You have to join and, by doing so, agree to the moderators' rules governing the group. Ones to look out for are – Woodworking Tips, Woodwork and Furniture Makers Project Forum; Woodworking Plus UK; and Woodworking UK Tools and Sales.



### Events

#### FFX Tool Show

1-3 March 2019, Kent Event Centre, Detling, Maidstone, ME14 3JF  
[www.ffx.co.uk/tools/toolshow/](http://www.ffx.co.uk/tools/toolshow/)

#### The Midlands Woodworking and Power Tool Show

22-23 March 2019, Newark Showground, Notts, NG24 2NY  
[www.nelson.co.uk/midlands-woodworking-power-tool-show.html](http://www.nelson.co.uk/midlands-woodworking-power-tool-show.html)





Iklwa Chair by Mac Collins



Corkey's Cabinet by Harriet Speed

# Young Furniture Makers' Exhibition

**B**reakthrough design talent from across the UK came together in London on 10 October to exhibit for one day only at the Furniture Makers' Company's annual Young Furniture Makers' exhibition.

Around 90 pieces of furniture and lighting from GCSE and A Level students through to BA and MA graduates packed out the Dutch Church and Furniture Makers' Hall in Austin Friars, London, contributing to one of the best displays in the exhibition's more than 10-year history.

The Young Furniture Makers' exhibition, sponsored by Axminster Tools & Machinery, Harveys Furniture, Bensons for Beds and The Furniture Ombudsman, is completely free for participants to exhibit at and provides the next generation of designers and makers an invaluable opportunity to

present their designs to key members of the furnishing and design sector.

Hayden Davies, Master of The Furniture Makers' Company, officially welcomed guests at 7.00pm before presenting this year's awards, which were assessed during the day by a panel of distinguished judges.

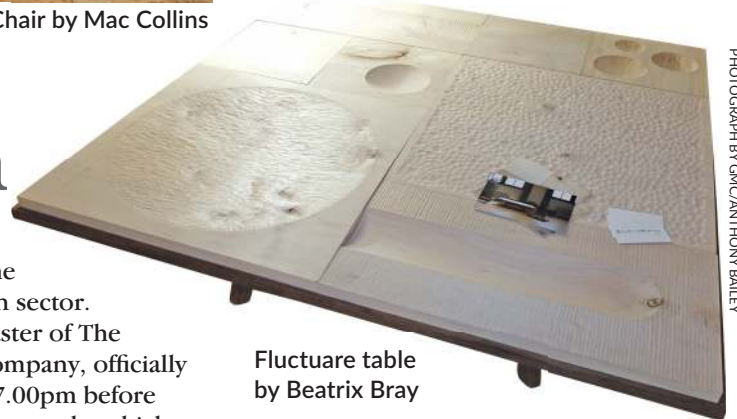
This year's judges were: Anthony Bailey, editor of *Woodworking Crafts* magazine; Steven Minghella, retail sales manager at Timothy Oulton; Rupert Senior, multiple award-winning designer-maker; Peter Sharratt, technical support advisor at Blum; and Alan Styles, managing director at Axminster Tools & Machinery.

The winners of the awards were:

- **The Young Furniture Makers' Bespoke Award**, sponsored by Festool, was awarded to Beatrix Bray for the Fluctuate Table.
- **The Young Furniture Makers' Design Award**, sponsored by Crofts & Assinder, was awarded to Lewis Small for the Wilf Floor Lamp.
- **The Young Furniture Makers' Innovation Award**, sponsored by Knightsbridge, was awarded to Matt Hill for the Array Table.
- **The National School Prize** was awarded to Brodie Haward for the Radioactive Bench.



Radioactive Bench by Brodie Haward



Fluctuate table by Beatrix Bray

- **The Blum Best in Show Prize** was awarded to Harriet Speed for Corkey's Cabinet.
- **The Timothy Oulton Best in Show Prize** was awarded to Mac Collins for the Iklwa Chair.

This year's exhibition also included a special feature of six chairs from the Frederick Parker Collection, an educational resource owned by The Furniture Makers' Company, which includes more than 200 chairs and archive material spanning 300 years.

Master Hayden Davies said: 'The Young Furniture Makers' exhibition continues to go from strength to strength and the 2018 event showed that there is a lot of exceptional up-and-coming talent out there. The Young Furniture Makers' exhibition brings together all elements of The Furniture Makers' Company's wide education output, the culmination being a tremendous celebration of incredibly gifted young designers who want to build long and successful careers in the industry.' ■



# Walnut cabinet alteration

Making a door to perfectly match a cabinet requires skill, as Louise Biggs shows us



PHOTOGRAPHS BY LOUISE BIGGS

**1** The cabinet is made of walnut-veneered board material in a traditional style with chamfered pilasters on each side with a reeded detail. The top and drawer front have a herringbone inlay, which has white lines on the outside edges. The drawer has a cock bead edge and it has been artificially bleached and distressed. A neat little cabinet the client loves except for one point – he would prefer it had a door. A smaller job but complicated by the finishing process required to obtain a colour match. ➤



**1**

## Tool list

- Panel saw
- Tablesaw
- Planer/thicknesser
- Router
- Straight and Ovolo cutters
- Chisels – various widths
- Pin hammer
- Utility knife
- Cabinet scraper
- Flush-cut saw
- Screwdrivers
- Marking gauge
- Drill and drill bits

## Personal protection equipment

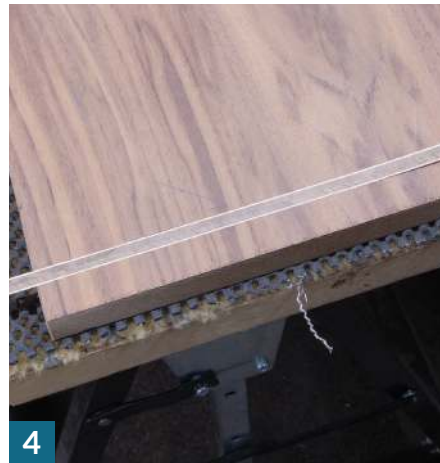
- Eye and dust protection when making
- Full face shield, fume/odour respiratory protection
- Heavy duty gloves



**2** A piece of pre-veneered 15mm board was selected and cut to size on the panel saw. The measurements took into account the thickness of the cock beading and the clearance spacing around the four sides so the new door would complement the drawer front. The four corners were also marked to show the outer position of the inlay line.



**3** As the inlay line did not match a cutter size, a double cut would be required. A smaller, straight cutter was used and the router set up to cut the outer part of the groove 15mm in from the outside edge. The lines drawn on the door in the previous stage acted as the stop lines. The extraction duct was removed so the lines could be clearly seen, which prevented me from up-cutting (moving the router in the wrong direction for the cutter). Respiratory protection was used with an extractor running in the workshop.



**4** The first groove was also cut on an offcut of board to act as a test piece for setting the router for the second cut. The fence was moved in stages and the line test fitted until a tight fit was achieved. The second cut was then made on the door.

**5** The outer corners were trimmed out using a wide chisel. A wider blade helps to keep the line of the corner straight as the blade can be rested against the cut edge before the waste is removed using a 6mm chisel.



**6** Having decided which way up the door would go, the top and the direction of the herringbone inlay was marked on the door. Each length of inlay line was fitted and mitred at the corners before being glued into place using a waterproof glue. Once dry the lines were scraped to level them with the veneer, and the door was abraded.

**7** Two lengths of timber were prepared to the thickness of the cock beading. In order to handle them while routing the quadrant on the edge they were cut wide enough for two lengths of cock bead, plus the saw cut and allowance for cleaning up the back edge. Using a small Ovolo cutter each length was run through the router on both sides of each edge.



**8** Before cutting into individual lengths the rounded edges were abraded through the grits and any



final rounding over completed. They were passed through the saw table to separate each length and the back edge planed to remove the saw marks.

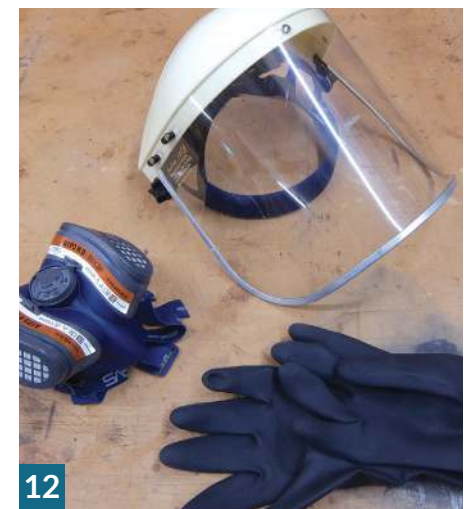
**9** Each length was cut to length with mitred corners. The cock beading was glued (waterproof glue again) and pinned into position at each end and the centre using a waste block to keep the back edges flush. Masking tape was used to pull the remaining beading against the board edge.

**10** Because of the wider spacing required around the door and the chamfered pilasters, the hinges were only cut into the door. The knuckles of the hinges were slightly thicker than the cock beading and the remaining thickness equalled the spacing down the side, so the hinge would be surface mounted on the inside face of the cabinet. Fitting the hinges I cut through the cock beading with a flush-cut saw before cleaning out the waste with a chisel, leaving the beading in three sections and the knuckles flush with the front edge.

**11** Using a marking gauge and a small square the positions of the hinges were marked on the inside face of the cabinet. To allow for the chamfered pilaster the screws were fitted at a backwards angle into the side to get the greatest holding depth without coming through the reeded detail. A small drop handle and a magnetic catch were also fitted.

## Bleaching and finishing to match

**12** The bleaching and distressing on the small cabinet was a bit excessive over the sides and drawer front. Yes, some bleaching would occur, depending on how the cabinet was situated – for example in front of a window – and yes, the cabinet would receive scratches, dents and other knocks through the course of its life, but this was unnaturally so. Having discussed this at length with the spray finisher we were left with no option but to bleach the new door, hence the waterproof glue. We use what is commonly referred to as Super Bleach (possibly a trade product only) and the necessary protective equipment must be used. Preferably a full face mask, goggles at the very least, odour/fume respiratory protection and heavy duty protective gloves.



**13** Super Bleach (also ISO bleach depending on supplier) is a two-part bleach made up of solution No.1 or A – an aqueous alkaline solution – and solution No.2 or B – hydrogen peroxide.

The solutions can be applied using bleach brushes, grass brushes or rag mops, and brushes/rag mops must be available for each solution and be clearly marked.

On no account should the brushes/rag mops used for solution No.1 also be used for applying solution No.2, or vice versa, otherwise what can only be described as a chemical reaction will take place. This also applies to disposing of any rag mops and brushes.

Acetic acid is used to neutralise the bleach after 24 hours. ➤



**14** Solution No.1/A was applied with the grain as it will start to work immediately. A liberal coating was applied over the door panel and around the cock beading. This was left for 30 minutes to work. The solution started to draw the colour/redness from the timber/veneer so it got darker as the 30 minutes went by, as shown in the photo.

**15** Solution No.2/B was again applied with the grain, making sure that all the surfaces to be bleached were thoroughly coated with the solution. The door was then left for 24 hours for the bleach to fully work. This photo shows the door one hour after solution 2/B was applied.

**16** After 24 hours the door was neutralised using acetic acid liberally wiped over all the areas that had been bleached and working into the corners of the cock beading. The redness of the walnut had been replaced with a yellow hue.

## Oxalic acid

This is a gentler bleach than Super Bleach and may, for the more cautious craftsman, be a safer method. It comes in a crystal form which is dissolved in hot water (not boiling) until a saturated solution is achieved. Once coated over the job it looks wet, but as it dries a crystal formation appears on the surface. When completely dry it is neutralised with water and allowed to dry. Repeated applications would be needed to achieve the same level of bleaching gained with the Super Bleach.

Full use of PPE is essential for safety when using oxalic acid.

**17** Having sealed the door with an acrylic primer, the dark distressing in the corners and around the edge of the cock beading was sprayed in using a mixture of colour tints. A seal coat of lacquer was applied. The artificial scratches and dents were added by using a fine-tipped brush and a denser mix of tints followed by another seal coat.

**18** Final tinted coats of lacquer were applied to adjust the colour further before the final clear coat of lacquer was applied. With the lacquer hardened the hardware was reinstated and the door fitted on to the cabinet. Spray finishing was completed by Phoenix Fitted Furniture. ■







# Upcycled drawers

The **Editor** gives new life to old shop drawers

**H**ere we go again. I'm a sucker for breathing new life into old wood... namely a set of seven shop drawers that would have once held items such as ironmongery when they sat in our now-defunct local general store, the sort almost every village once had. They had done more recent duty as workshop drawers and consequently were dusty, greasy and generally rather unappealing, with a very chipped coating of tired cream gloss paint. To top it off they needed a carcass to put them in.

Best get started then... ➤

## Safety note

The initial stripping of these drawers' fronts involved the use of heat, which gives off fumes; chemical stripper and solvents, which also give off fumes; and, in the case of cellulose thinners, highly flammable. You **MUST** use a face mask designed to filter organic fumes, and work in a ventilated area with no open heater elements, sparks, lit cigarettes etc. present. Chemical-resistant gloves, a protective apron and face-sealed safety eyewear are also strict requirements for this kind of work.



## Stripping off

**1** Recent felt-tip writing shows these drawers were reused as drawers for plumbing fittings.

**2** Chemical use isn't a great thing to do, so it seemed a better option to start with a heat gun on medium heat.

**3** Heat alone was sufficient to remove the majority of the paint from the wood. A face mask was used during this process in case any lead-based paint was present.

**4** The point of a scratch awl helped remove paint from around the recessed turned knobs.

**5** The mahogany drawer fronts still looked messy with paint due to the battered surfaces, so the next stage was paint stripper.

**6** Coarse grade 2 wire wool was needed to drag off the mucky residue. Cutting it with dedicated scissors is much safer than trying to tear it, which will cut fingers.

**7** Chemical-resistant gloves and plenty of ventilation are essential when using paint stripper, even though the formulae are supposed to be safer these days.

**8** Unfortunately, even after neutralising the stripper with wax cleaner, there were still residues on the surface. The final process was to use volatile cellulose thinners with plenty of ventilation, a filter mask and no naked flame.



1



2



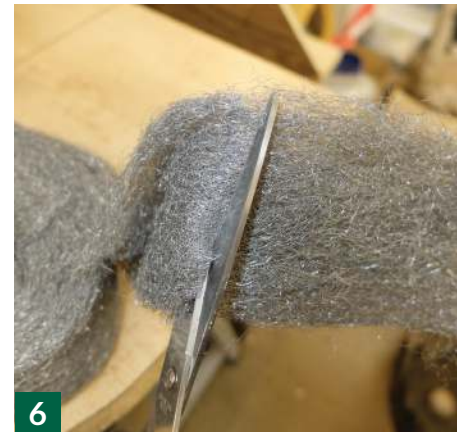
3



4



5



6



7



8





9



10

**9** These multiple steps have resulted in very clean-looking drawers with only minor paint inclusions where the fronts have suffered dents.

**10** A light rub-over with foam-backed 320 grit abrasive denibs the surface ready for refinishing.

### Colouring up

**11** The first job was a neat brush coating of a dark-stained Danish oil, as it had a pleasing colour and it would harden on drying.



11



12

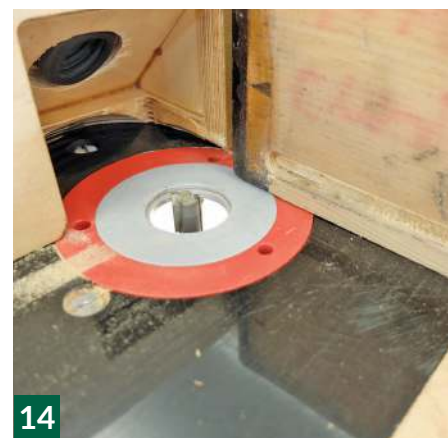
**12** Some drawers were a lighter wood, so I mixed up a small amount of Vandyke Brown powder dye with more Danish oil to coat those particular drawers in a second coat.

### Drawer repairs

**13** Now my attention turned to repairing the drawers' runners, some of which just needed replacing or regluing. Several had sections of drawer side torn out.



13



14

**14** The answer was to 'stop' machine slots removing the damaged areas ready for patching.

**15** Slim strips cut on the tablesaw and trimmed with a smoothing plane had their ends rounded to match the ends of the stop cuts and were then glued and pressed into place.



15



16

**16** The repair strips were then trimmed flush with a fine-set plane ready for a light dye treatment later. ➤



## Carcass building

**17** The next job was to create either one tall carcass or two unequal-height carcasses, so an overall measurement leaving drawer gapping was the starting point.

**18** The carcass sides would be made by running a pile of ill-assorted pine boards, some with old worm holes, through the thicknesser down to 19mm, except for the backs which would be 16mm.

**19** After sawing the edges straight and hand-planing them, all the boards were jointed to create wide enough carcass sections.

**20** My wife's decision was that she wanted two drawer sets – three and four drawers apiece. Overall measurement had to include a 2mm air gap around each drawer, but in practice looser still as the drawers were not exactly sized.

**21** All components were then cut on a compound mitre saw and checked for square. This aluminium speed square is cheap and rests neatly against the side of a workpiece.

**22** I now use a cordless 18-gauge nailer for many tasks. It is quick, easy and, importantly, it doesn't split the wood. All components have PVA glue applied first.

**23** The first of the two carcasses waiting for the reclaimed pine back to be glued and nailed on.

**24** Some of the carcass components are made of very worm-eaten reclaimed pine, but no insect activity is present – call it 'character'. They will have dye and spray lacquer applied, which will kill anything.



17



18



19



20



21



22



23



24





**25** A quick sanding over with 220 mesh Abranet on all external surfaces.

**26** All arrises were 'broken' by hand using standard Alox paper, so no sharp, catchy bits to worry about.

### The finish

**27** My current favourite brown-coloured Danish oil applied all over the exterior. I was going to use clear Halfords lacquer over the dried stain. You aren't supposed to apply lacquer over an oil-based layer but it worked perfectly with no 'rejection'.

**28** All the drawers were then clear-waxed inside and out. This would help them to run smoothly and replenish the very dry, old pine making it smoother, more pleasant and dust-shedding.

**29** The waxing helped the old handwritten script on the drawers stand out more. 'Tare' may refer to the weight of the drawer, allowing the drawer and loose contents to be weighed on the scale, then to subtract the tare to arrive at the weight of the remaining contents.

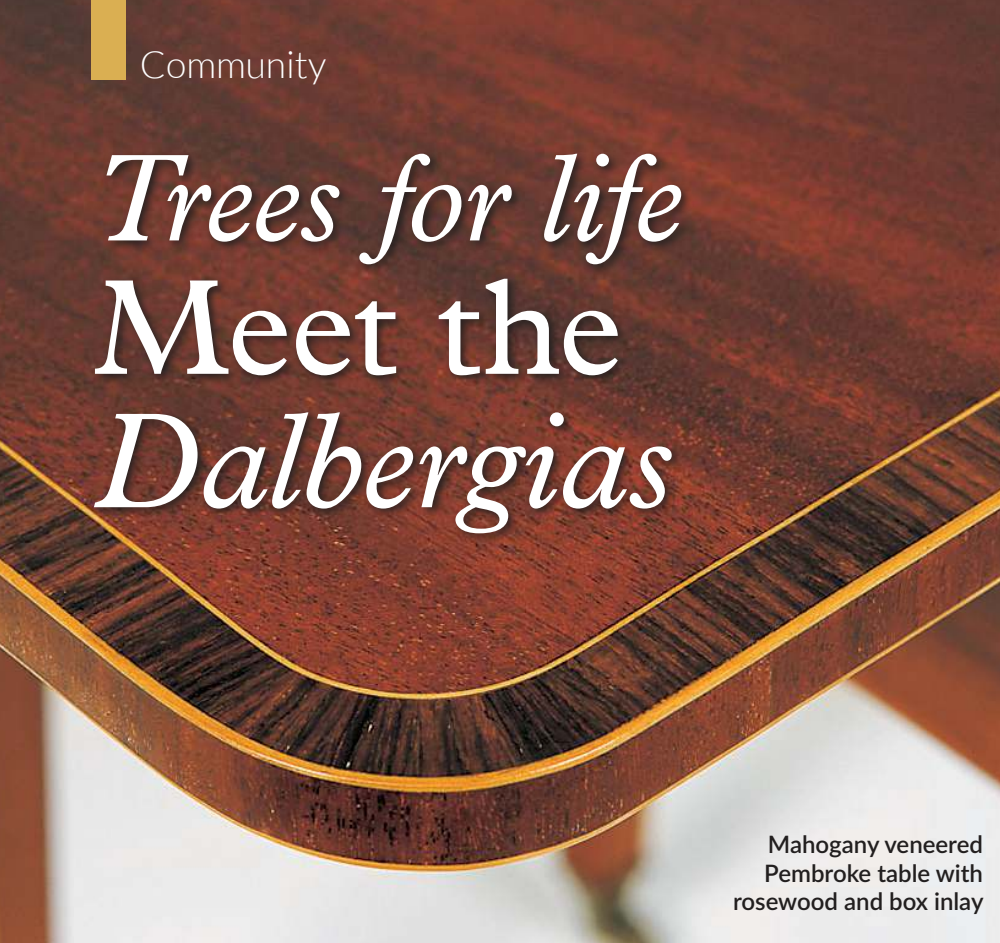
**30** The finished carcasses ready for the drawers. One happy domestic customer. ■





# Trees for life

## Meet the Dalbergias



Mahogany veneered  
Pembroke table with  
rosewood and box inlay



Indian rosewood back and  
sides with contrast bindings



Above: Chair in solid Rio rosewood  
Right: Kingwood chess piece

Rosewood, kingwood, tulipwood, blackwood

If you have been following this tree series you will know I often make reference to a large 'genus' to which a particular species belongs, often running into hundreds of species. The world is a vast and complex place and sometimes homing in on just one species doesn't do all its relatives any favours. So this time I thought I should have a brief look at a number of trees that fall within the *Dalbergia* genus, which incidentally and rather bizarrely belong to the pea family, *Fabaceae*. Without exception the trees – which are exotic tropical species in most, if not all, cases – are under threat, according to the IUCN Red List. However, the value in knowing about them is that there are some legitimate imports and they often turn up in antique furniture, so it is useful to be able to recognise what

you may be looking at if it isn't just a mahogany or walnut piece of furniture.

The popular names, such as rosewood, derived from the need to make these new-found timbers sound as exotic and sometimes fragrant as they looked. Having a fancy but easily recognisable name would help sell what were then brand new pieces of top quality furniture. Our understanding of the taxonomy of this vast range of species has enabled us to identify what are often quite small groups of vulnerable trees so we can try to protect them from modern harvesting and land clearance practices. Often a common name such as rosewood can be applied to several different species, for example Bà rja rosewood (*Dalbergia bariensis*), Madagascar rosewood (*Dalbergia maritima*), Indian rosewood (*Dalbergia latifolia*) are just three example which are geographically spread (bear in mind the planet was much smaller once and continents used to be together by land).

### ROSEWOOD

True rosewoods belong to the *Dalbergia* family, the pre-eminent one appreciated in the western world being (*Dalbergia nigra*). Generally known as Brazilian rosewood or Bahia

rosewood, it has a strong, sweet smell that persists and explains why it came to be called rosewood. Indian rosewood (*Dalbergia latifolia*), also known as sonokeling in Indonesia, is also plantation grown in Pakistan. Madagascar rosewood (*Dalbergia maritima*) is known as bois de rose. Highly prized for its red colour it is heavily overexploited despite a moratorium on harvesting. There are about a dozen species that yield 'rosewood' characteristics.

### Uses

Rosewoods are suitable for guitars – the fretboards on electric and acoustic guitars often being made of rosewood – marimbas, recorders, turnery such as billiard cues, fountain pens, black pieces in chess sets, etc., handles, furniture and luxury flooring.

### Working properties

All rosewoods are strong and heavy, taking an excellent polish. The working properties vary among the different species but, in common with many exotic species, they are harder to work,



PHOTOGRAPH COURTESY OF WIKIPEDIA COMMONS

Small blackwood pipes  
by Simon Hope





causing moderate blunting of tools and liable to split if not pre-drilled carefully. They may also be oily or gummy, so preparing surfaces to take glue may be necessary.

## Health hazard

The dust created from sanding rosewood is considered a sensitising irritant and can trigger asthma and other respiratory ailments. Often, the more people are exposed to rosewood dust, the more sensitive they can become. Similar problems often arise with other exotic species, not just rosewoods.

## KINGWOOD

A small tree, kingwood (*Dalbergia cearensis*) is only found in a small area of Brazil.

## Uses

It is a classic furniture wood, now almost exclusively used for inlays on very fine furniture. It was the most expensive wood in general use for furniture making in the 17th century, at which time it was known as princes wood. Occasionally it is used in the solid for small items and turned work, including parts of billiard cues. It is brownish-purple with many fine, darker stripes and occasional irregular swirls. Occasionally it contains pale streaks of a similar colour to the sapwood.

## Working properties

The wood is very dense and hard and can be brought to a spectacular finish. It turns well but, due to its density and hardness, it can be difficult to work with hand tools. It also has a tendency to blunt tools due to its abrasive properties.

## BLACKWOOD

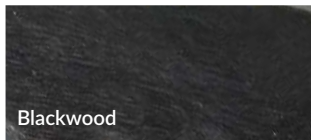
African blackwood (*Dalbergia melanoxylon*) is a small tree reaching 4-15m tall, found in seasonally dry



Rosewood



Kingwood



Blackwood



Tulipwood

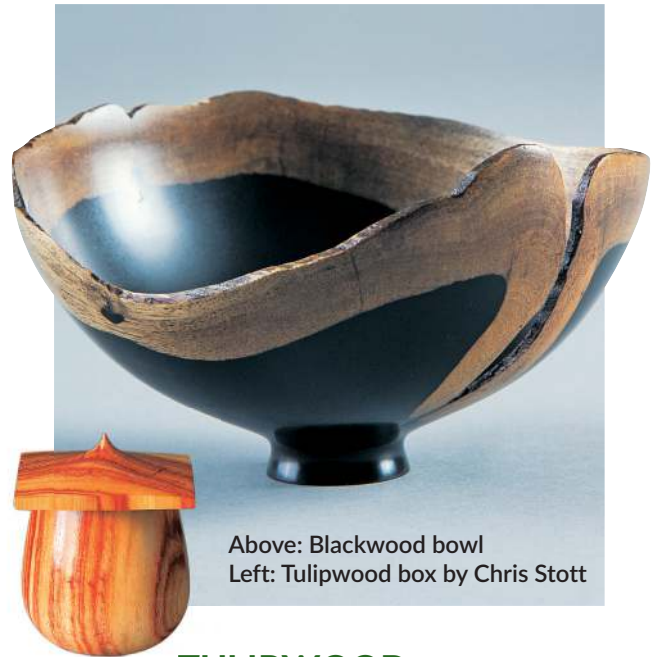
regions of Africa, from Senegal to Eritrea, and the northernmost parts of South Africa. Not to be confused with ebony – genus *Diospyros*.

## Uses

The dense, lustrous wood ranges from reddish to pure black. It is generally cut into small billets or logs with its sharply demarcated, bright yellow-white sapwood left on to assist in the slow drying so as to prevent cracks developing. Good-quality timber commands high prices on the commercial timber market. The tonal qualities of African blackwood are particularly valued for woodwind instruments – clarinets, oboes, transverse flutes, piccolos, recorders, Highland pipes and Northumbrian pipes – because of its machinability and dimensional stability.

## Working properties

A very strong, tough timber, it requires TCT cutters for conversion and generally has a severe blunting effect on tools. It requires pre-boring for nailing and screwing but does take glues quite well.



Above: Blackwood bowl  
Left: Tulipwood box by Chris Stott

## TULIPWOOD

Brazilian tulipwood (*Dalbergia decipularis*) is the correct species identification for a tree found only in a small area of Brazil. It is not to be confused with North American or Chinese tulipwood, which is an entirely different, lower grade of timber used for standard cabinetwork.

## Uses

A classic high-quality wood, it is very dense with a lovely figure. It is used for inlays in furniture and for small turned items. Available only in small sizes, it is rarely used as solid wood for luxury furniture. Like other woods with a pronounced figure, it is rather strongly subject to fashion.

## Working properties

Heavy, hard and dense, it is difficult to work and can be splintery. It has a severe blunting effect on cutting edges. A reduced planing angle is advised for quartered stock and irregular grain. Pre-boring is essential but it takes glues well and can be brought to high-polished finish.

As already explained the entire *Dalbergia* family is vast and complicated in its characteristics. For practical applications we would recommend a book – *Wood Identification & Use*, by Terry Porter, GMC Publications Ltd, ISBN 1-86108-436-6.

To find out the current environmental status of any exotic tree species visit the IUCN Red List of Threatened Species – [www.iucnredlist.org](http://www.iucnredlist.org) ■

PHOTOGRAPH COURTESY OF WIKIPEDIA COMMONS



Blackwood (*Dalbergia melanoxylon*)

PHOTOGRAPH COURTESY OF THINKSTOCK



Tulipwood (*Dalbergia decipularis*)



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## *Oak and sycamore chest of drawers*

- Michael T Collins makes a safe-to-use crosscut sled
- Inlay banding techniques
- Stained glass conservation



PHOTOGRAPH BY KEVIN LEY



PHOTOGRAPH BY MICHAEL T COLLINS



PHOTOGRAPH BY GMC/ANTHONY BAILEY



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# Vintage hacksaw restoration

The **Editor** finds a little hidden gem in need of TLC

**T**his year gone has taught me never to be too hasty about chucking things away. I had to skip a lot of old iron and steel only to discover that two iron stands, identical to ones I had disposed of, turned up on TV on a programme you may have seen called *Salvage Hunters*. Damn! They had history and a value. OK, learn and move on. In an old tool drawer I found this cruddy-looking little junior hacksaw. A bit of careful examination quickly established that it probably dates to the 1950s and was far better made than the current offerings, with its cast metal handle and adjustment for tightening the blade, which junior hacksaws now lack.



1

1 It looked fairly uninviting but I reckoned with a good clean-up it could still shine.



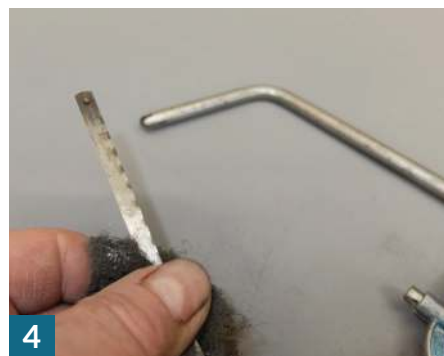
2

2 A still plastic bristle brush and a wax cleaning compound was starting to remove the grunge of ages.



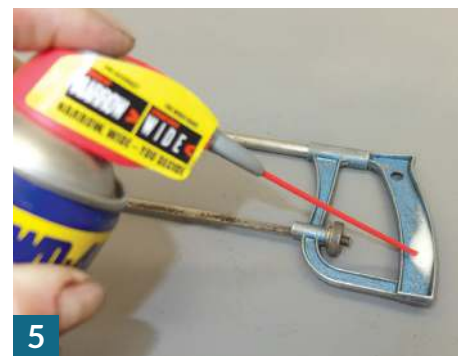
3

3 A small piece of Mirox webbing abrasive lifted off the most recalcitrant, hardened-on grime and made the alloy edges bright.



4

4 The frame and even the blade got the treatment. The advantage of webbing over wire wool is that it won't encourage any rusting or unintentionally magnetised iron filings sticking to the tool.



5

5 And finally... a squirt of WD40 to clean, lube and shine. Half an hour well spent. I really like the blade-tightening feature and the anti-knuckle banging, enclosed hand grip. ■





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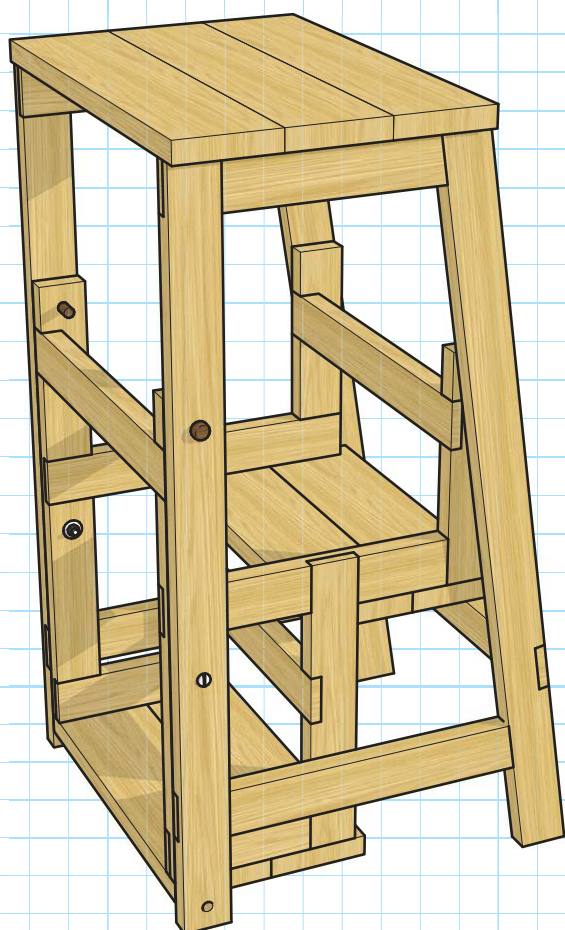
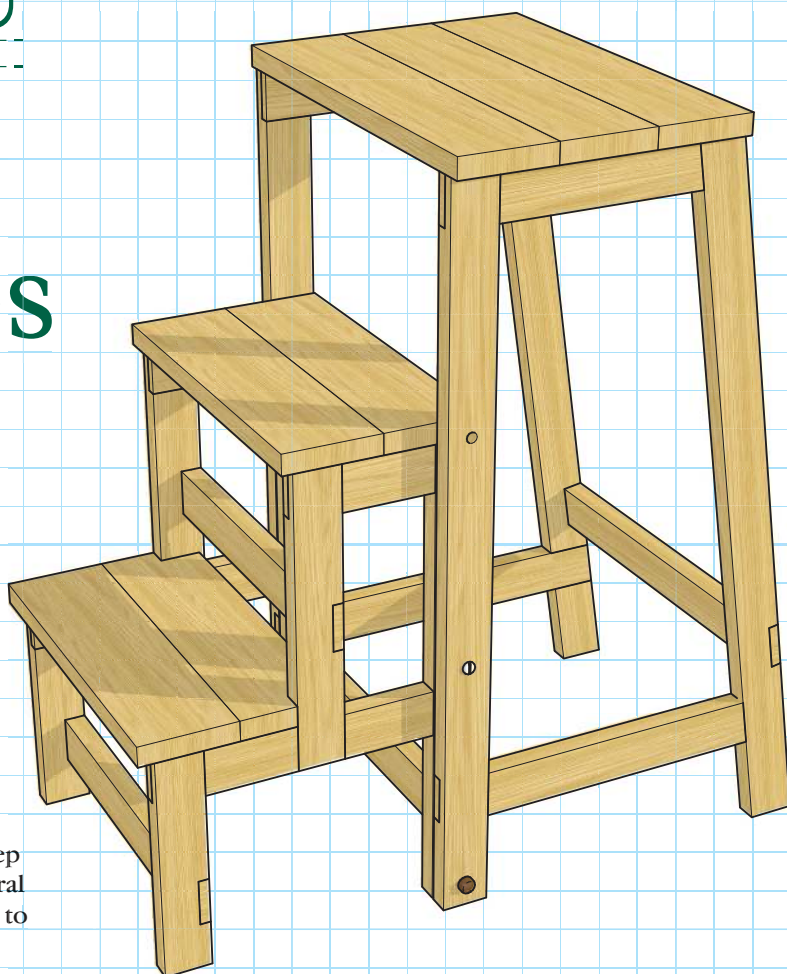
# PLANS 4 YOU

## Folding library steps

Our resident 'bookworm'  
Simon Rodway's latest design

**A**lthough the implication in the name is that you need some stately home with a dedicated space for books to own a set of these steps, they are practical for all kinds of uses around the home, and double up as a stool when the step part is stored away. While they're more commonly built to include one additional step, I've gone for a slightly higher variation with two stored steps to increase the reach a bit.

The construction is based on a number of half lap joints on both the outer frame and the inner pivoting step structure, with additional cross rails on both to give lateral rigidity. The outer frame only has a cross rail at the back to



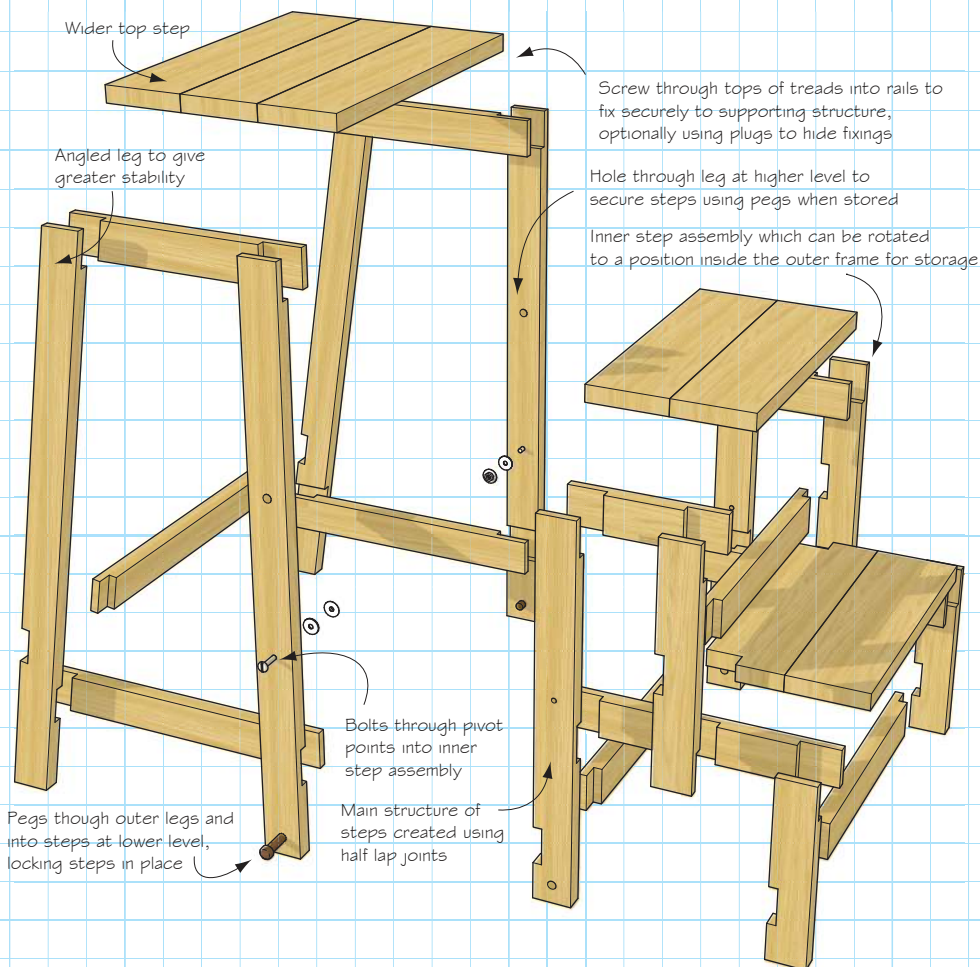
allow the steps to be fully rotated, but uses the inner step frame to prevent spreading through steel bolts, which act as the pivots as well. The back legs are also angled to increase stability, so the tenons to this side need to be shaped accordingly.

The steps (or treads) themselves are located with a regular rise of 240mm, with the top step wider and deeper than the other two. Having a consistent height between each step actually makes them a little bit safer and easier to use, something we respond to without even being aware of it when we use stairs or ladders, for example.

The treads need to be securely fixed to the supporting frames, not least because they also add to the lateral rigidity of the structure, and countersunk screws into the tops of the rails would be the most obvious option here. The treads on the bottom step need to be notched at the back on each side to fit around the vertical frame.

The front legs of the outer frame, as well as being drilled to take the steel pivot bolts, also have holes above and below and equidistant from the pivot to allow pegs to be inserted, either when the steps are down or when they are stored. Matching holes are drilled through the bottoms of the back legs in the inner step frame, so that when the steps are being used they are effectively locked to the outer frame, greatly increasing their stability. Rotating the inner frame through 180° allows storage and the pegs can then be inserted through the upper holes to secure the whole structure together. ■





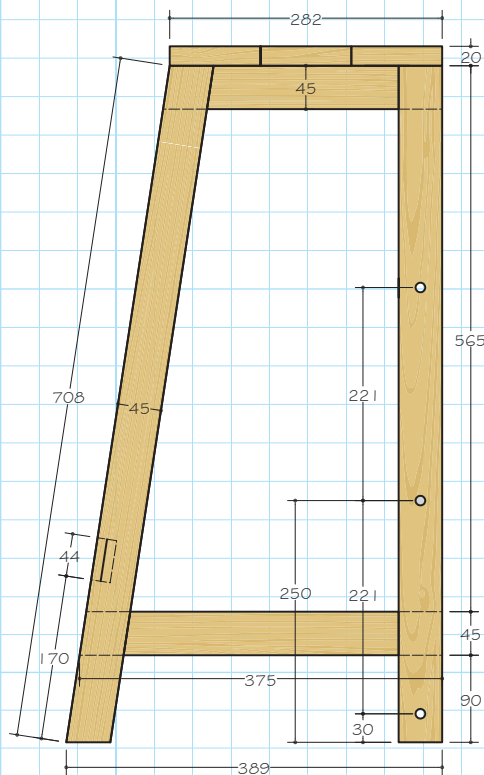
## Cutting list

### Outer steps

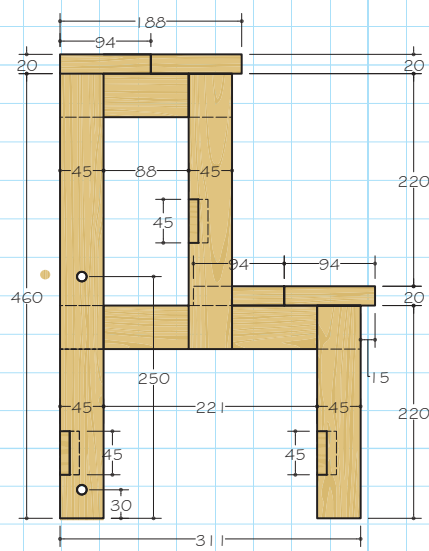
|               |                   |
|---------------|-------------------|
| Treads        | 3 @ 400 x 94 x 20 |
| Angled legs   | 2 @ 715 x 45 x 20 |
| Vertical legs | 2 @ 565 x 45 x 20 |
| Top rails     | 2 @ 289 x 45 x 20 |
| Bottom rails  | 2 @ 375 x 45 x 20 |
| Cross rail    | 1 @ 380 x 45 x 20 |

### Inner steps

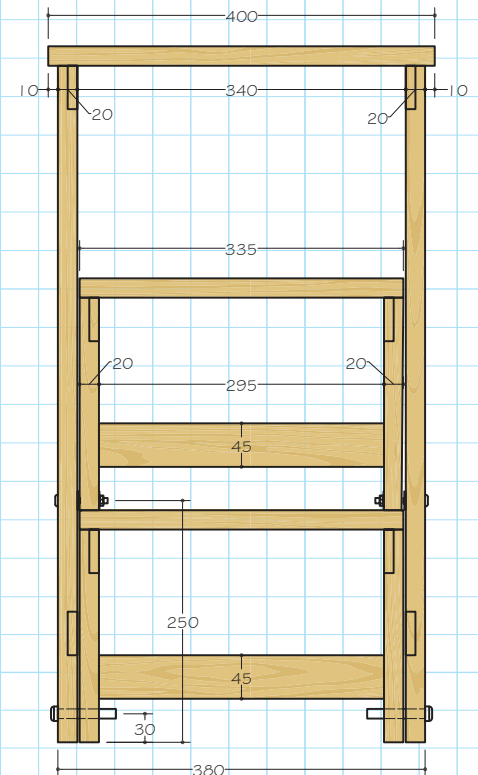
|              |                   |
|--------------|-------------------|
| Treads       | 4 @ 335 x 94 x 20 |
| Back legs    | 2 @ 480 x 45 x 20 |
| Front legs   | 2 @ 285 x 45 x 20 |
| Front legs   | 2 @ 220 x 45 x 20 |
| Top rails    | 2 @ 178 x 45 x 20 |
| Bottom rails | 2 @ 311 x 45 x 20 |
| Cross rails  | 3 @ 335 x 45 x 20 |



SIDE ELEVATION - OUTER FRAME



SIDE ELEVATION - INNER STEPS



FRONT ELEVATION - COMBINED





Appearances can be misleading.  
This fireplace is fake with just a  
plain, flat wall behind it

PHOTOGRAPHS BY GMC/ANTHONY BAILEY



## *Upcycled shield*



The Editor re-discovers his blue blooded, aristocratic roots with nothing more than a simple paint job...

**C**hristmas 2017 and my daughter Amber, for a laugh, bought us all the title of a manor in the north of Cumbria that dates from shortly after the Norman invasion. It's a bit of fun, we don't actually own anything, although you can tramp over the little piece of land set in beautiful scenery, of which you have a notional title along

with anyone else who has decided to become lords and ladies of the manor. Our lounge already seems to have its fair share of armorial bearings, medieval helmets and statues of knights for some strange reason – what was lacking was a shield. My wife found one at a jumble sale and handed it to me with the instruction: 'Can you do something with this?'





**1** This is an exercise in creative paintwork, nothing more. The bare play shield with a smooth finish that needed 'keying' to take spray lacquer.

**2** Standard Halfords grey automotive primer, perfect for gripping to the existing surface and smoothing out any defects.

**3** Rubbing back with Mirka foam-backed Goldflex and then removing dust with a tack rag, its sticky surface collecting any particles.

**4** Now for the gloss black body colour, building up in several coats then rubbing back and removing dust between coats.

**5** The gloss lacquer reveals just how uneven the lacquer really is – keep going...

**6** The gloss surface is indeed glossy but still shows up ripples in

the lacquer. More abrasive levelling is required.

**7** Now to paint the lion rampant with bright-red gloss paint using several coats to blot out the underlying black completely.

**8** Now for the little figures in each top corner. Oh dear – I've just realised they are bunny rabbits. Never mind, it's not obvious at a distance.

**9** Several coats of genuine gold-filled lacquer using a finger rubbing against the edge for brush guidance. So much better than cheap gold paint.

**10** Several coats of Halfords clear gloss lacquer and we're done. It can now take its place in our – ah hmm, baronial hall... ■





# Dremel 930 glue gun test

The **Editor** gets stuck into his work thanks to this handy glue gun

I've never really got into using glue guns, although both my sons do on their practical projects and I know a woodturning editor (Mark Baker) who finds a glue gun very useful. Never too late to learn – the 930 is third along in the Dremel glue gun lineup, sporting dual heat, which seems essential for strength in joints etc.

It is compact and light – so much so that the stiff flex is sometimes enough to turn it over even with the support foot down. A 7mm dia. glue stick is just pushed into the rear opening and after about five minutes' switch-on time the stick is heated enough to melt and a press of the trigger then exudes the glue. Dremel claims its glue guns don't drip glue between presses, which is important to avoid spoiling your project. The glue can, of course, be stringy if you pull away from the work as it oozes out.

Glue sticks that come with the 930 model are four colours rather than the previous glitter sticks, plus samples of high and low-temperature sticks. For decorative projects low temperature is fine



The three packs on the left are supplied with the gun

but more structural fixing will need the high-temperature ones. In addition, you can get wood glue sticks, which I didn't have when I first tested this gun. To use coloured sticks, Dremel suggests cutting them shorter to avoid wastage if you only want a bit of each colour.

## Verdict

It is an unavoidable nuisance that the gun can get turned over by a wayward flex, although you can persuade it to behave. When a glue stick gets too short the stick pressure pad has nothing to act against, so you need to insert another stick to push the first one through. Although I didn't have the wood glue sticks to hand, I tried a high-temperature stick for bonding two strips of pine. The bond didn't fail but the wood did, so that's a win for hot melt. If you want a quick, easy and also decorative way to complete your projects then the 930 may well be for you.

Dremel 930 Dual Heat Glue Gun £19.99  
[www.dremeleurope.com/gb/en](http://www.dremeleurope.com/gb/en)



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# Ask the experts



ANTHONY BAILEY  
Editor,  
Woodworking  
Crafts magazine

Another batch of awkward questions for the **Editor** to answer

## A DATE WITH CARBON

**Q** You referred to using carbon fibre dowels in your chair project in the December issue but you haven't really explained why or how they should be used, otherwise why aren't we all using them in our projects? Are they really that good and what about cost? I thought it would be more than you suggest. **S**

Bill Nye

**Anthony replies:** Unfortunately when an article gets quite lengthy, something is bound to be cut out, so I wasn't able to expand on this quite important topic. So here goes – carbon fibre has now been manufactured since 1963, having been invented in 1958, so it is a 'mature' technology. As with any new invention, the more it is used, so the cost comes down and lengths of rod are being sold on eBay and elsewhere quite cheaply. So long as you are only using small pieces it is quite economical. Anyone who has used a carbon fibre fishing rod will know it isn't invincible – put enough strain on it and it will break. It comes in different shapes and the strands are placed in specific patterns, in rod form they just run lengthwise. I wouldn't advocate changing over to carbon fibre just for the sake of it, wooden dowels and other jointing methods are normally appropriate, but occasionally,



Carbon fibre is easy to cut with a fine-tooth saw



My stress test got this 6mm dia. rod to a 90° bend before breaking

as with the Glastonbury chair, you can be faced with a situation where the stress on a wooden component is potentially so high it could fail in normal use. You will find my article in this issue on repairing a hoop-back Windsor chair which needed a slim, broken spindle rejoined, or a new



It cannot absorb wood glue so CA adhesive is the practical solution



The rod failed spectacularly – note how the long section has split apart

one turned to replace it. Carbon fibre worked brilliantly, using CA glue to set it in the wood. You can use a smaller diameter than the wood equivalent for most purposes due to its strength. It is worth having several lengths of different diameter rod in stock just in case...

## IS IT A STEAL?

**Q** I was tempted to buy a £7.99 Japanese saw in our local discount supermarket, normally they are three times the price. Can it be any good if it's that cheap? **S**

Carrie Wilson

**Anthony replies:** In the interests of research for our readers I thought I should seek this one out and give it a try. My thoughts are – the blade metal is OK, the two blades are flexible and the tooth form, although not quite what I would expect, did allow both blades to cut quite well. The problem is that the manufacturer has created flexible 'flush-cut' shaped blades but given the teeth a 'set', i.e. angled slightly outwards, which you don't have on a flush-cut blade. For normal cuts you would have a bigger blade or even a rigid back for cross cut or dovetail work. So the design is a slightly odd compromise between two different saw types. At the price it's worth a pop, but if you are serious about using pull saws you need to spend more to get the right quality.



A cheap Japanese saw



## STILL A MYSTERY

Hi Anthony. I was fascinated to read about your research into the history of your drop-leaf table in the last issue. I come from several generations of cabinetmakers and joiners and I'm currently trying to discover more about them, including their war service. Something puzzled me. You say that in the 1812 voting register the man who made the table was noted as 'a gent'. Surely that means he didn't have to work? So why did he go to London and become a lowly Dickensian Bob Cratchit-type of clerk? It doesn't quite make sense – sorry it's not a woody type of question, just interested really.



Bob Carver

The 'mystery maker' revealed

**Anthony replies:** First of all, I'm glad you enjoyed the article and not just for the restoration techniques, but the history trail as well. To be honest I asked myself the very same question, which I then decided to put to our brilliant local historian. I decided not to put his answer in the article as Thomas Godfrey Shreeve is no longer here to be

able to tell us himself. However, I have now decided to share our historian's answer verbatim, without any further comment from me.

'I have a book entitled *A Dictionary of Old Trades, Titles and Occupations*, by Colin Waters, which gives this definition of a gentleman: Anyone who had inherited or achieved wealth/status

within their community so that they did not have to work. High-ranking "workers", such as judges, doctors etc. were also given the title of "gentlemen". Here is another interesting snippet from the book *Making Sense of the Census...* "the men in the brothels on census night were given such occupations as "Gentleman" (Query)..."

## GETTING IN A SCRAPE

I read somewhere, maybe in this magazine, that you can rip smaller-size green logs down on a bandsaw if you use a coarse enough blade. I bought the blade and it works perfectly but my machine has now got gummed up doing the cuts and it runs noisily and badly. Am I doing something wrong or are there ways to stop it happening?

Ben Hendry



This sticky gunk will make a bandsaw run badly. The sharp side edge of a chisel can scrape this stuff away – mind the blade as you turn the wheel

**Anthony replies:** Unfortunately any cuts in green wood can cause the bandwheels to get gummed up due to the damp resinous wood, especially rip cuts because that produces long stringy waste. To be honest there isn't a magic answer, after I've done a run of green wood cuts I scrape the bandwheels clear of the mess, empty the lower casing and clear all around the guides and it's all ready to go again.



A casing full of damp wood waste doesn't help. Extraction won't draw this away



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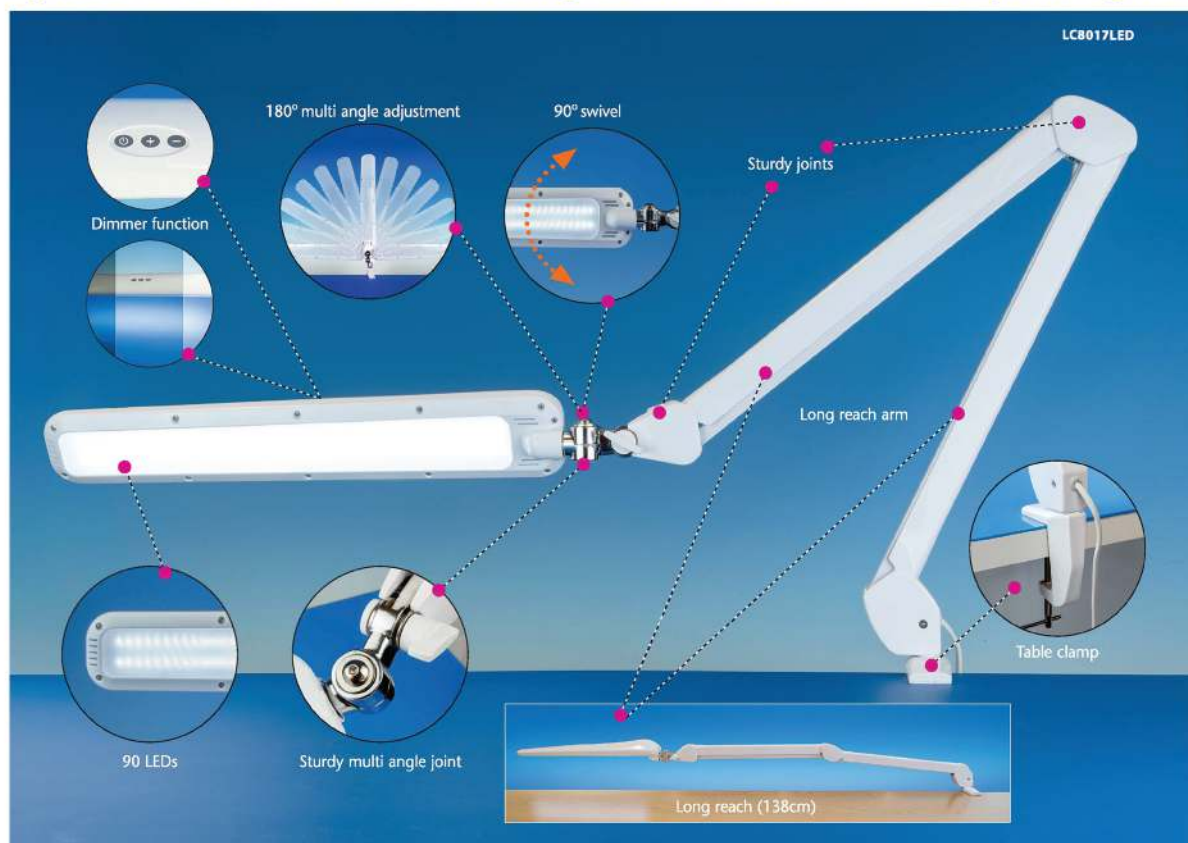
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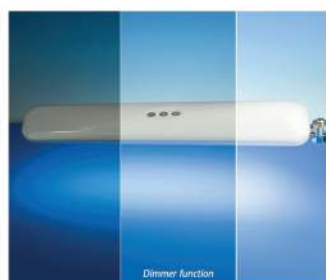
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# Tricks *of the* trade...



Crudely hacking together half a chair to see if it looks as good as it did on paper – no joint work involved, just screws

## Prototypes

If you have a tricky project it's never a waste of time making a prototype before you start

**W**hen you want to make something complicated and you aren't sure, it is far better to knock up a part of the whole of your intended project, using scrap wood before making the real thing. It avoids making mistakes, ruining good wood and being frustrated by the process, or even not completing it.

The example here is a chair, which is one of the most complex and time-consuming things you could make, but even straightforward cabinets

benefit from doing trial and error first, especially if there are joints and unusual details to be considered. You don't even have to make the entire piece – it might just be a critical joint detail, it might be the aesthetics of the design, it might help with the ergonomics or quantity ordering. All good reasons to check before committing to a full-blown project.

So, that pile of softwood offcuts and bits of ply in the workshop could be very handy.



PHOTOGRAPHS BY GMC/ANTHONY BAILEY

The back leg has a series of mortise and tenon joints, all carefully drawn out on this template to see how they will work



Checking the vital rear leg joint area and the addition of a strengthening bracket which will also hold the seat squab

Softwood has the advantage of being soft enough to screw together quickly without necessarily having to make the hidden joints used on the actual project, and it's cheap too. Ply in several thicknesses will substitute for solid wood panels without laboriously machining stock, which would otherwise get thrown away after prototyping.

Best of all, prototyping either confirms that you have got things right or possibly wrong, in which case you can make corrections. It means you can start your project in the knowledge that what you practised, you can now put into action – and no excuses. ■



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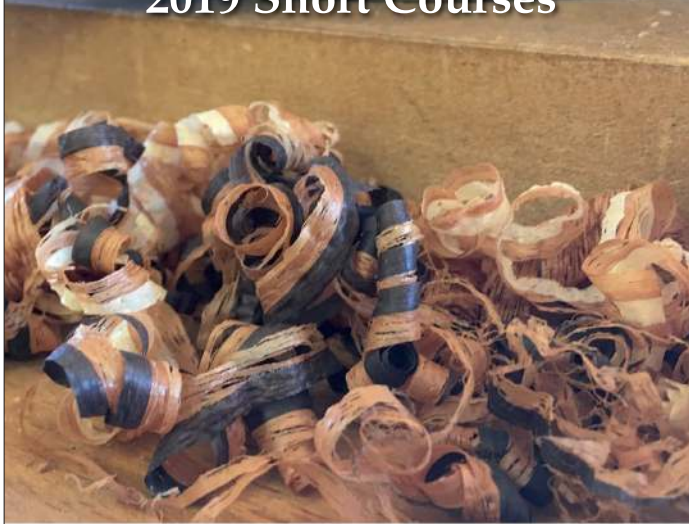
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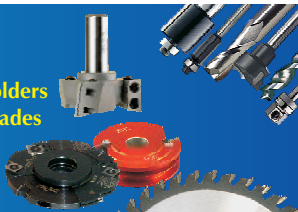
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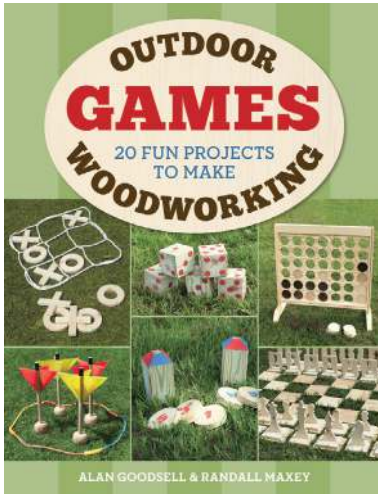
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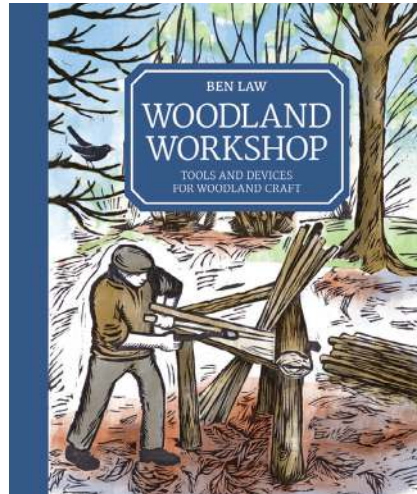
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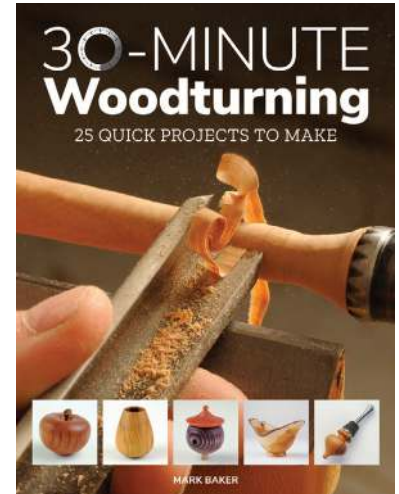
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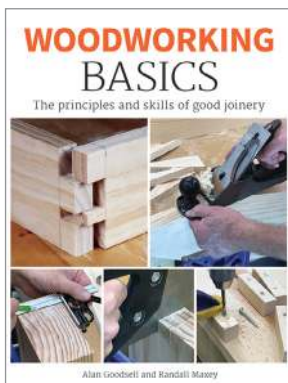
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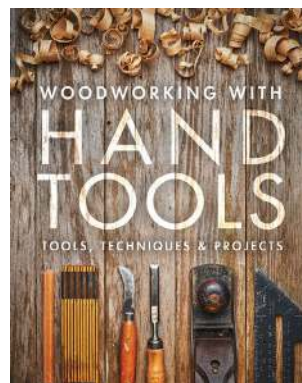
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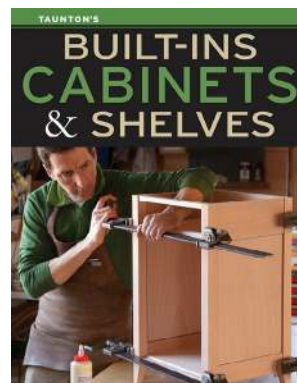
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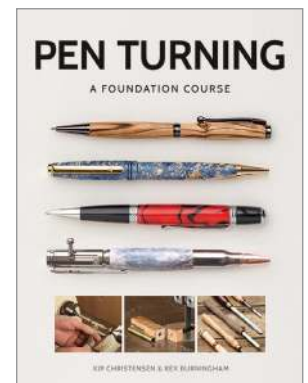
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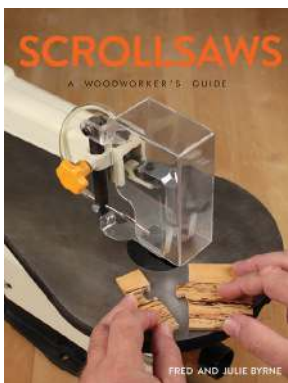
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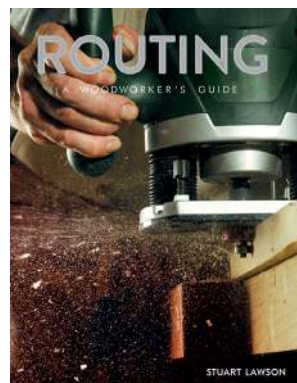
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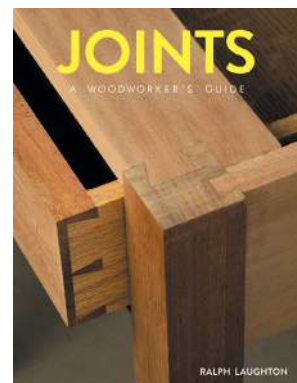
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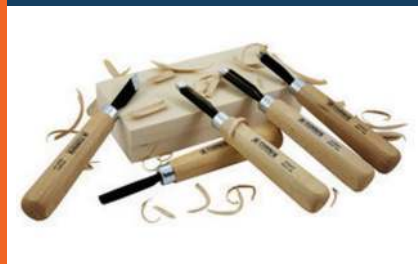
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# Focus on...

PHOTOGRAPH COURTESY OF SHUTTERSTOCK

## Centre Pompidou - Metz

There is the Centre Georges Pompidou in Paris, with its boxy industrial design, but a less well-known building with his name also exists...

**C**entre Pompidou, in Metz, north-eastern France, was the first decentralisation of a national cultural establishment in France, being a branch of the Centre Pompidou, central Paris. Centre Pompidou was developed in collaboration with the greater urban community – the Communauté d'Agglomération de Metz Métropole. It is a public establishment for cultural cooperation, the founding members of which are the French State, the Centre Pompidou, the Lorraine Region, the Communauté d'Agglomération de Metz Métropole and the city of Metz.

The Centre Pompidou-Metz is an art centre dedicated to modern and contemporary art. It features semi-permanent and temporary exhibitions from the large collection of the French National Museum of Modern Art, the largest European collection of 20th and 21st century arts. The museum is the largest temporary exhibition space outside Paris in France, with 5,000sq m divided between three galleries, a theatre, and an auditorium. Its cultural project comprises temporary exhibitions as well as live performances, films and talks within

its spaces. Ongoing workshops for kids and teens provide insight into artistic movements and highlight the potential for creativity.

The first piece of the monument, designed by Japanese architect Shigeru Ban was laid on 7 November 2006 and the building was inaugurated by French president Nicolas Sarkozy on 12 May, 2010.

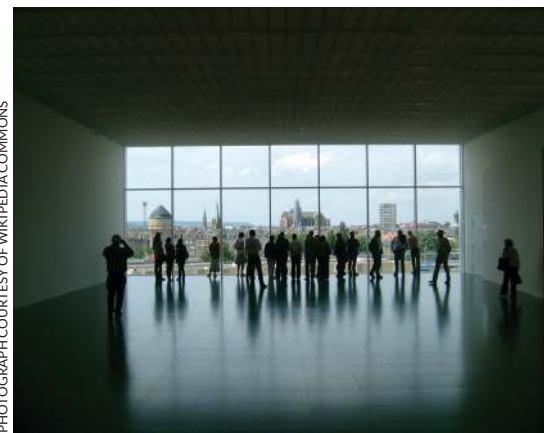
The building is remarkable for its roof structure, one of the largest and most complex built to date, which was inspired by a Chinese hat found in Paris by Shigeru, who also became known for innovative work with paper, including using recycled cardboard tubes for housing disaster victims.

The roof is the major achievement of the building – a 90m-wide hexagon echoing the building's floor map. With a surface area of 8,000sq m, the roof structure is composed of 16km of glued laminated timber that intersects to form hexagonal wooden units resembling the cane work pattern of a Chinese hat. The roof's geometry is irregular, featuring curves and counter-curves over the entire building, and in particular the three exhibition galleries. Imitating the hat and its protective

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fabric, the entire wooden structure is covered with a white fibreglass membrane and a coating of Teflon, which has the distinction of being self-cleaning and protecting from direct sunlight, while providing a transparent view at night.

To see more: **YouTube – Metz from Above** published by Lorraine Tourisme. ■



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