Furniture &cabinetmaking

Issue 263 ▪ November 2017 ▪ £4.75

DESIGN ▪ INSPIRATION ▪ PROJECTS ▪ TECHNIQUES ▪ TESTS ▪ NEWS ▪ EXCELLENCE

Restoration Man
Liam Thomas puts a contemporary classic chair back on its feet

Pure and simple
Build a Japanese-style toolbox for hand tool storage

A chip off the block
Medieval Gothic carved panel step-by-step

Panel Saws

K4 perform

K3 winner comfort

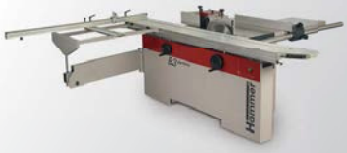
Planer-thicknessers/Planers/Thickn

A3 41

A3 31

A3 41 A

Saw Spindle Moulder



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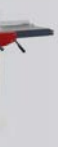

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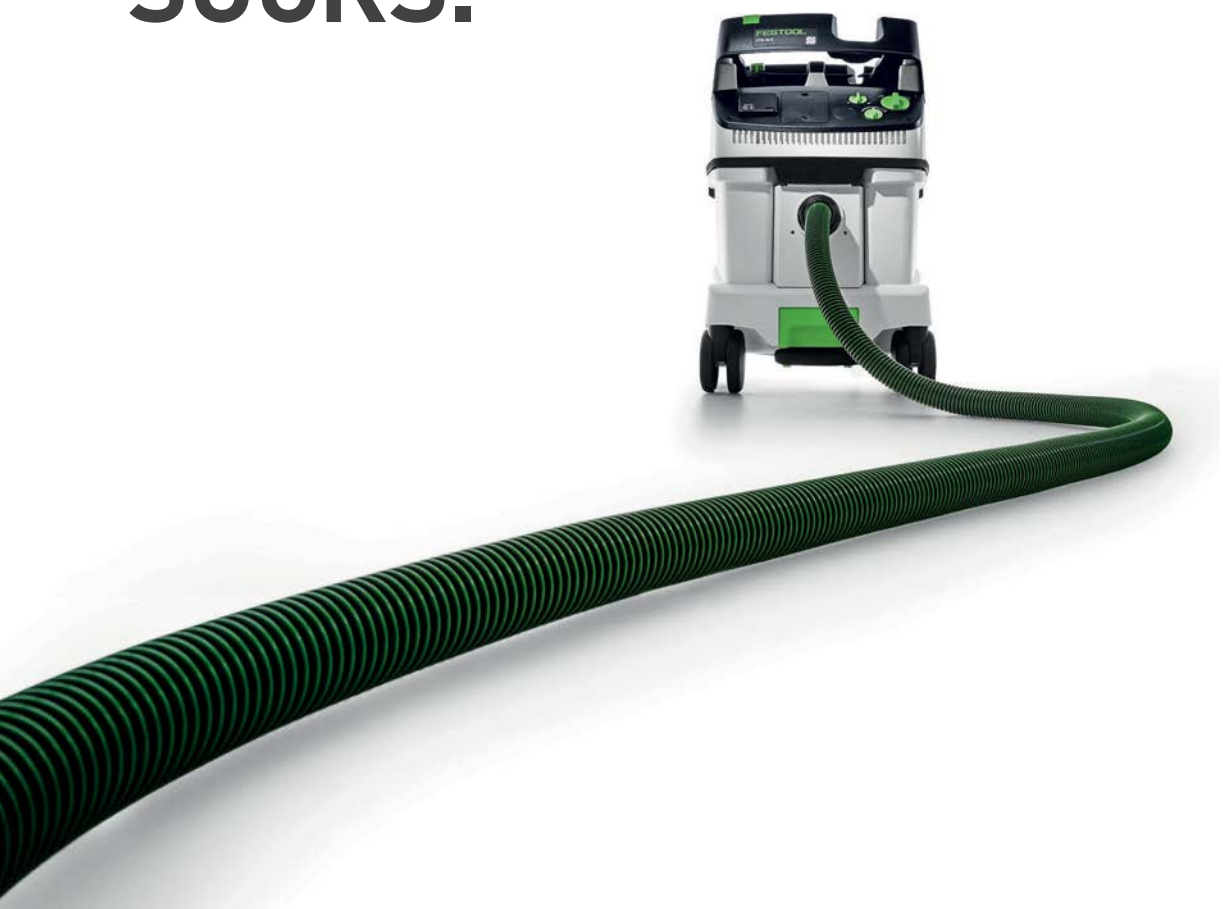

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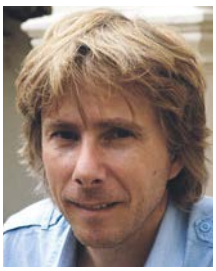

Welcome to...

... modern revivals

Andrew Strickland's Radius II wall cabinet was one of the highlights from this year's Celebration of Craftsmanship and Design exhibition

The European Woodworking Show has been one of the highlights of the woodworking calendar since 2009, attracting exhibitors and visitors from around the world. But sadly, Mike Hancock and the team at Classic Hand Tools have decided to make this year's show the last. If you've been in the past or were just fortunate enough to be there this year, there's no doubt the show ended on a high with a record number of demonstrators and visitors in attendance. EWS has made a significant contribution to the craft world in general and will be sorely missed.

Australian mid-century modern isn't something we've covered before in *F&C* so when Liam Thomas started work on restoring a genuine Grant Featherston chair we had to get in touch. Like a lot of designs from this period, construction methods weren't always able to keep up with the designer's vision and whereas the restoration workshops of the world were once full of rickety 18th and 19th-century chairs, so it seems the tradition is likely to continue with those from the 20th.

The cabinet on stand has been a set piece for craftsmen through the centuries. Typically small, the form is often comprised of multiple intricate details that allow the maker to explore and display a variety of techniques without investing too much in materials. At the end of his year-long course at Waters and Acland, David Waite is putting them all together in his final piece before going solo. Having been on display at Celebration of Craftsmanship and Design this summer, you can see his interpretation complete with exposed joinery on page 32.

Carved decorative panels were once used to convey an advanced level of competency by the maker in the period before marquetry and inlay were slapped on to every flat surface. To get us re-acquainted with this style I've tracked down a great little set piece for you to try on page 50. To complete the project you might need to invest in a couple of new chisels but as I've never heard anyone complain about that before, I'm assuming you'll take up the challenge and let me know how you get on.

Finally, if fast and furious is more your style then we have Vic Tesolin back with us this month on page 10 building what must surely be the ultimate tool chest for the minimalist woodworker.

Derek Jones
derekj@thegmcgroup.com

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Don't forget there are plenty more articles and discussions to be found on the Woodworkers Institute & Forums
www.woodworkersinstitute.com

Woodworking is an inherently dangerous pursuit. Readers should not attempt the procedures described herein without seeking training and information on the safe use of tools and machines, and all readers should observe current safety legislation.

Your *F&C*

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Design & Inspiration


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Meet the contributors

Kieran Binnie

Kieran's passion for woodwork started at the end of law school when he enrolled at the Totnes School of Guitarmaking. His focus has since expanded to include furniture making as well as lutherie. Kieran writes a regular blog at www.overthewireless.com, and is currently researching and writing a book for Lost Art Press about Welsh Stick Chairmaker John Brown.
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Steve Bisco

Steve Bisco has been carving for over 30 years, specialising in decorative carving in period styles, first in wood and recently in stone. He is a regular writer for *Woodcarving* magazine and his book *Stone Carving for the Home & Garden* is available now from GMC Publications.

Charles Mak

With previous careers in hospital management and corporate compliance, Charles semi-retired in 2005, the same year he joined Lee Valley Tools/Veritas as a part-time Customer Advisor. He became interested in hand tools after realising that his customers were often more knowledgeable than he in traditional woodworking. To fix that, he bought many of the tools he sold, put them to use in his own shop and made mistakes until he could write or teach about them.

Vic Tesolin

After his honourable discharge from the Canadian Artillery, Vic studied furniture design and making at Rosewood Studio. He ran his own studio furniture business while working at Rosewood as a part-time instructor and craftsman in residence. He now serves as Woodworking Technical Advisor in the R&D department of Veritas Tools. Vic is also the author of *The Minimalist Woodworker*, which encourages new woodworkers to do more with less.
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Liam Thomas

Liam is a furniture maker and restorer based in Melbourne, Australia. Having studied both furniture making and design in the UK and Australia, Liam takes on all manner of unusual and one-off commissions. His restoration business specialises in mid-century design, restoring and repairing both local and Scandinavian pieces. When not making in his own workshop, he teaches at a local woodworking school.
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Ramon Valdez

Ramon works full-time as a production manager in his brother's cabinet, countertop and fixtures shop in New Mexico. As well as making gallery quality furniture in his spare time, he has taught marquetry classes at his local college. Ramon is the man to go to for the best time-saving tips and ingenious short cuts.
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David Waite

David has been involved in scientific research for over 20 years prior to enrolling on a one-year designer/maker course at Waters and Acland. Over the coming months he will be writing a series of short articles for *F&C* capturing his observations and experiences to try and become a professional and setting up his own fine furniture making business.
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Japanese-style tool box

Vic Tesolin takes you through the building of a tool box design that is millennia old

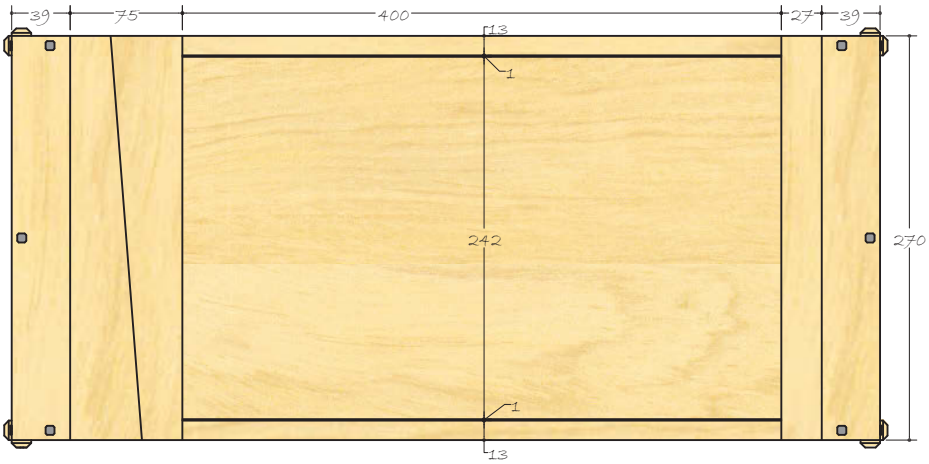
I'm a believer in the axiom, 'A place for everything and everything in its place'. This couldn't be truer when it comes to my woodworking tools. Not only does this keep your space organised but it keeps your precious tools safe too. You also spend less time searching for tools when you are in the throes of a build. The Japanese certainly understood this and their tool boxes are a testament to that. With their simple designs and easy building techniques, these boxes make great storage solutions. You can make them big or small, fancy or spare, either way you will have a classy home for your tools. The one in this article is on the large size designed with Western tools in mind.

The traditional material for this tool box is softwood, in this case I'm using eastern white pine (*Pinus strobus*). You can make these boxes out of any species you like, just keep in mind that the box will weigh much more if you make it from a hard wood. I started with 20mm stock and brought it down to 12mm to make the box lighter. Unless you plan on chucking your box down a flight of stairs, building it out of thicker material is overkill. Begin with the grunt work and break out your timber for the sides and ends according to the cut list.

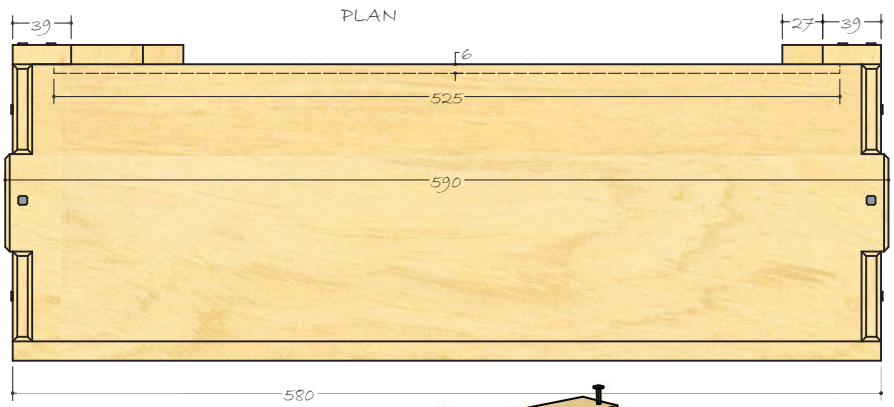
Cutting list

Part name	QTY	Length	Width	Thickness
Side	2	590	185	13
End	2	280	185	13
Bottom	2	580	140	13
Top	1	525	243	6
Fixed batten	2	272	39	13
Lid batten	1	272	27	13
Locking batten /wedge	1	272		13

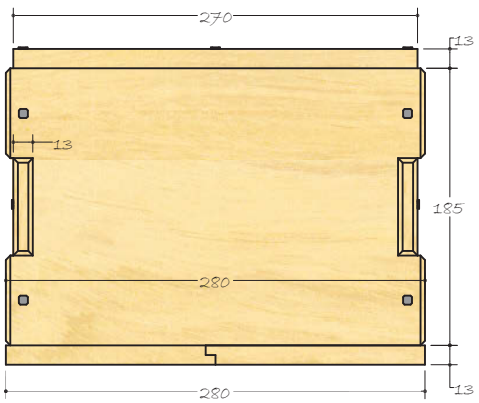
PHOTOGRAPHS BY EX BOWELL



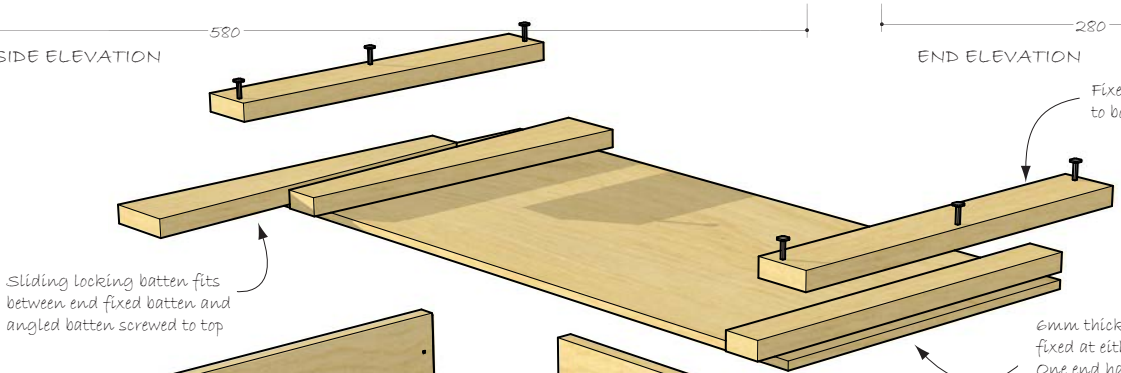
PLAN



SIDE ELEVATION



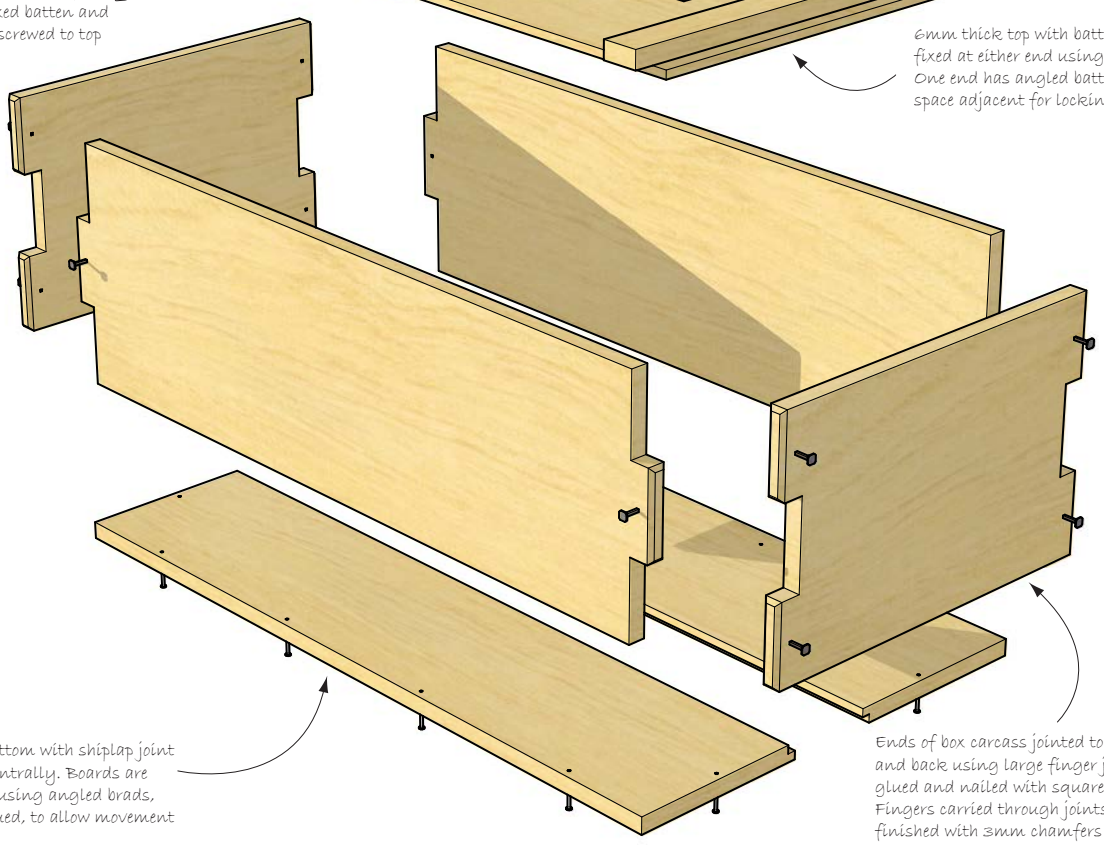
END ELEVATION



Fixed battens nailed to box to secure top

Sliding locking batten fits between end fixed batten and angled batten screwed to top

6mm thick top with battens fixed at either end using screws. One end has angled batten with space adjacent for locking batten



Two part bottom with shiplap joint running centrally. Boards are toe-nailed using angled brads, and not glued, to allow movement

Ends of box carcass jointed to front and back using large finger joints, glued and nailed with square nails. Fingers carried through joints and finished with 3mm chamfers on ends.

Flattening a board by hand

Wedges will keep the boards from rocking as you work

Start by working across the grain to get boards flattened by hand

If you are thicknessing by hand, strike a line for your final depth and work towards that line

No worries if you don't have apprentices (machines), you can easily create a flat surface with a hand plane. My 'go to' plane is a low-angle jack as it truly is the workhorse of all my bench planes. I begin by placing the board on the bench with the cup facing up. To support the board and prevent rocking while I work, I use small wedges to take up the space. To start, lay the plane across the board tilting it so that only the edge of the plane is touching. Next, sight down the board and note the high spots, you're essentially using the plane as a straightedge. The first passes happen at roughly 45° starting at one end to the other, then flip the plane 90° and cover the entire board again. This flipping of the plane helps ensure that the board becomes flatter, not just thinner. Next, make passes with the grain to remove the cross-hatching pattern you just put there. Once you get full-length shavings, gauge the board with the edge of the plane again to see how you did. Once one side of the board is flat you can use that side as a reference surface on the bed of a thickness planer. No thickness planer? No problem! Grab a wheel marking gauge and set it for the thickness you're after then referencing the flattened surface, gauge a line all around the board. Now you can grab your jack plane and remove material stopping when you reach those lines. Who needs a gym membership?!

The cabinetmaker's triangle makes orienting parts a breeze

Orient the boards

Once you have all your side and end pieces, scrutinise the grain and mark a cabinetmaker's triangle on the parts. One of the great advantages to being a woodworker is being able to orient the boards to make the best use of the wood's natural beauty. I take my time with this step no matter what the project is.

Layout the fingers

The finger joints on this box are probably not what you think of when you hear finger joints. We're used to imagining many, tiny fingers that require a power tool to cut and patience to assemble. Not here. Each corner will have a total of three fingers: two on the sides and one on the ends.

Start by setting a marking gauge to the thickness of the sides plus 4mm. If you're scratching your head at this don't worry, it will all make sense in future steps. Scribe the two surfaces of the side boards at each end and the surfaces and edges of the end boards.

You could reach for a ruler and divide the boards into threes using maths, but why frustrate yourself? Reach into your tool kit and pull out the tried and true dividers. Set the dividers to approximately one-third of the side width and start walking the dividers along the end-grain. Go lightly at first to ensure that you don't end up with multiple holes as you sneak up on the perfect third. If you are hanging off the board at the count of three, you have gone too far. Two? Too little. Once you can go edge to edge with a count of three, press the tips in a bit deeper so that you can see your marks. Use a square to mark the end-grain then carry the lines on to the surfaces and mark the waste with an 'x'.

Mark the depth of your fingers using a wheel marking gauge

The humble divider once again takes the maths out of woodworking

Saw away

Start with the two rip cuts being sure to stop at the line you struck. Then rotate the board to make the shoulder cut. Start this cross cut with a small notch (known as a knife wall) by placing a chisel into the knife line then coming in from the waste side, removing a small fillet of material creating a space for your saw to drop into. Saw the cross cuts on the waste side of the lines and try to make them as straight as possible. This half of the joint will become the pattern for the other half so it's important that your cuts are square and plumb. If your cuts are less than perfect, you can tune them up by paring them with a chisel. It would be helpful to make some practice cuts in some timber that isn't for this project just to get warmed up.

Saw as straight as you can because this half of the joint becomes the pattern for the other half

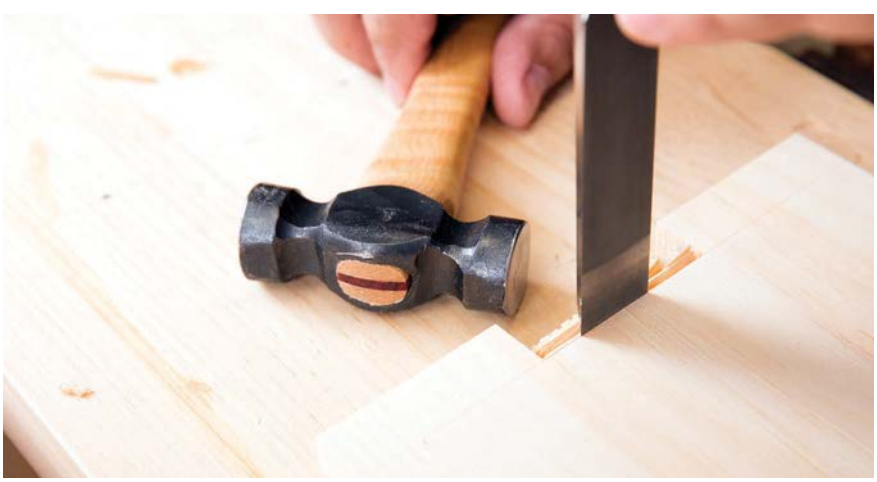
Making a knife wall is a great way to ensure you are sawing in the right spot

The shoulders need to be right on the line. If necessary, pare to the line after sawing

The transfer

This is where having your boards marked with a cabinetmaker's triangle pays off. Orient your parts so that they create a triangle and start transferring the marks. Take one corner (one side and one end), place the end board in the vice, then lay the side board onto the end grain. Line up the sides to ensure that the boards will line up during assembly, then apply pressure with your hand and use a knife to trace the finger. Start with a light cut first then deepen it to ensure a mark that can be easily seen. Remove the side board but before you go too far with it, mark an 'x' on the waste.

Use a sharp knife like this blacksmith-made kiridashi to transfer the first half of the joint to the mating board



Remove the waste slowly. Rushing this step could lead to blowing past your knife line

Removing more waste

Once you have the location of the finger marked, you can then saw the waste out. Be certain that you saw on the waste side of the line (the wood with the 'x' on it). If you saw on the line or in the save side of the line, the joints will be loose and not fit together properly. Next, slide a coping saw into the kerf you made and turn the saw so that you are cutting parallel to (but above) the struck baseline. Using a chisel, chop the remaining waste away by halving the waste until you get to the line. Don't take off too much at a time. Taking too big of a bite will cause the chisel to be forced past the baseline creating an unsightly gap in the joint. If the joint is too tight, pare material off the two sides of the socket until the joint goes together with moderate hand pressure. Repeat these steps with each corner.

Chamfers all around

Mark the finger ends by setting your gauge to 3mm, then strike lines around the fingers and on the top. Use a block plane to remove the corners of the fingers stopping at the knife lines to get the chamfers all looking the same. The fingers protrude to protect the outside of the box and the chamfers prevent splitting if the finger does take a pounding – it looks pretty nice as well.

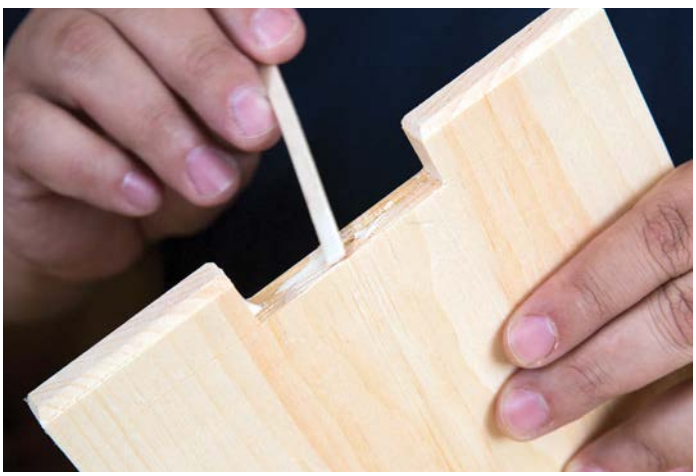
Mark out the small chamfers that will adorn the protruding fingers

Keep it between the lines to create those delicate chamfers

Assemble the side and back

Once all your joints are fitting well it's time for the glue-up. Orient your parts according to the triangle and get the clamps you will need ready prior to letting the glue flow. There is nothing worse than looking for clamps in a panicked frenzy. Start by gluing one end to a side. Put glue on all the surfaces then press the joint together. Then glue and assemble the second end onto the side. Flip the partial assembly and apply glue to the two ends, then slide the side into the two ends. Apply a clamp on each set of fingers to close the joint, check that the box is square, then let the glue dry.

The glue will do a fine job at holding this box together but why not add a bit of insurance that adds an aesthetic charm as well? Drill pilot holes into the centre of each finger and drive in a square nail. Choose a pilot bit that will allow the fattest part of the nail to bite into the wood.



Apply glue to all the surfaces but don't go overboard. Cleaning up excess glue around joints is a pain

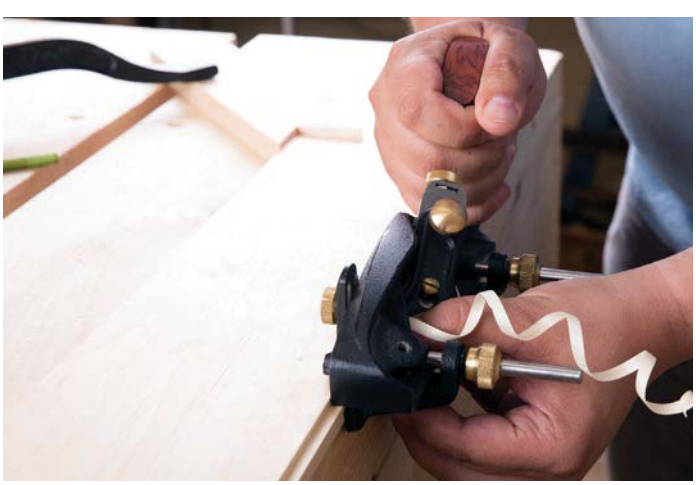
The last board to go in will slide into the two end pieces

Put a clamp across each set of fingers for a solid glue-up

The nails may seem like a belt and braces kind of move but they look so good on there

A solid base

Prepare the two bottom boards according to the cut list. You can leave them a few millimetres oversized; you will trim them to final length just before you install them. Run a rebate on the two inside surfaces to create a shiplap joint. This will allow for movement of the bottom boards to happen without opening a gap in the box for small tools to fall through. Place the boards on the bottom and nail them into place with small brads. You won't be gluing the bottom on so angle your brads so that they go in at an angle; a technique called toe-nailing. Gluing the top would cause a wood-movement nightmare and the absence of glue allows you to replace the bottom one day if required.



Rebate planes are the bee's knees when working on one-off projects

Angle the nails in to give them more holding power

Nifty sliding top

Prepare the boards for the sliding top. If you have timber wide enough to get it out of one piece then lucky you! If not, joint two boards to prepare them for gluing them up. Leave them a tad over-sized for now and you can size them exactly after the glue dries. On thin boards like these, I often prefer to use binding tape like Scotch 233+ to clamp things up; clamps can easily twist and cup thin boards. Place the boards together and start placing tape across the joint every 25mm or so. Plant one side of the tape with your thumb, stretch the tape across the joint and then smooth the tape down. Next, run a long piece down the joint to hold it securely.

Flip the taped boards over and open up the joint. Lay a small bead of glue on one edge of the board then let the boards lay flat. Repeat the same process with the tape to complete the clamp up. No need to run the long piece of tape on the second side as it will be difficult to apply with the glue squeeze-out in the way. Let the glue set up so that it is rubbery then remove the squeeze-out with a chisel.

Binding tape is used extensively by guitar makers and there is lots of use for it when making furniture

A narrow bead of glue is all you need to create a seamless top joint

Prep the box top

Prepare the fixed battens and nail them to the top of the box as indicated using more of the decorative nails to fix them in place. These battens are what will trap the top when slid into place. Size the lid according to the drawings and prepare the lid batten as well. The lid should just fit into the box's width without a lot of space to spare. The locking batten and wedge are created by one piece of wood. Simply mark the board as indicated, connect to the two lines, then saw down the line cleaning up your saw marks by clamping the two pieces together and planing them at the same time – this will ensure that they match.

Place the lid batten and the locking batten on the lid in the locations indicated and clamp them in place. Traditionally the battens would be clinch nailed into place but I opted for screws instead. Create a pilot hole with a bradawl so you don't split the wood and drive small pan-head screws in securing the battens to the top.

These fixed battens are what keep the top captured, securing your tools

With careful layout, taking the wedge and the locking batten out of one board will almost guarantee a great fit

Go easy when you are driving in these small screws. One slip of the trigger finger and you'll sink them in too deep

Using the lid

Slide the lid under one of the fixed battens leading with the end that has the locking batten, lower the other end down and then slide the lid to the other side of the box. Now you can slide in the wedge that will lock the lid in place. I typically don't apply finish to these tool boxes because I like the way the raw pine develops a patina over the years. However, your favourite finish or even a bit of wax will make the box look fantastic. Your tools now have a home that hasn't changed in design and function for millennia. *F&C*

The simple wedge keeps it all together

News & Events

Contribute to these pages by telling us about matters of interest to furniture makers. Call Derek Jones on 01273 402 843 or email derekj@thegmcgroup.com

Please accompany information with relevant, hi-res images wherever it is possible

2017 Alan Peters Award winners

Three furniture students were named the winners of the Alan Peters Award for Excellence at this year's Celebration of Craftsmanship & Design (CCD). Christopher Cooper, Freya Whamond and Finn James each won £100 to spend at Wood Workers Workshop who sponsored the award.

The Alan Peters Award commemorates a man dedicated to bespoke furniture and is designed to encourage and promote emerging young talent within the furniture industry.

Christopher Cooper, a student at Rowden Atelier Woodworking School, was rewarded for his Manuell-Coates cabinet. The judges described it as, 'a fun, quirky and confident piece that demonstrates accomplished workmanship and attention to detail.'

The Bud Chair by Freya Whamond of the Rycotewood Furniture Centre was praised for its 'ambitious and experimental design' and described as 'a visual feast'.

The third winner, Finn James, is a student at Williams and Cleal Furniture School. The judges were impressed by the excellent execution of his Brompton coffee table.

Award judge and director of CCD, Jason Heap, said, 'The judges were particularly impressed this year by three very different pieces. We felt that each, in their own way, showed good ambition, offered interest both visually and in their construction, indicated a good understanding of the materials used and demonstrated accomplished workmanship.'

Contact: Celebration of Craftsmanship & Design
Web: www.celebrationofcraftsmanship.com

PHOTOGRAPH COURTESY OF CCD

The Manuell-Coates cabinet by Christopher Cooper of Rowden Atelier Woodworking School

New national competition for furniture students

The Furniture Makers' Company and Axminster have launched a national competition for students. The challenge is to create a piece of innovative wooden furniture. Students will submit sketches and CAD illustrations of their designs and then 10 shortlisted students will be given three months to create their concept.

The deadline for entries is 26 January, 2018. More information, including the brief, is available on the Furniture Makers' website.

Contact: The Furniture Makers' Company & Axminster
Web: www.furnituremakers.org.uk & www.axminster.co.uk

Wood Awards 2017 shortlist announced

The judges of the 2017 Wood Awards have shortlisted 34 furniture projects for this year's competition. There are three categories for Furniture & Product Design: Bespoke, Production Made and Student Designer.

There are a further five categories for Buildings awards: Commercial & Leisure, Education & Public Sector, Interiors, Private and Small Project.

The awards ceremony will be held on 21 November.

Contact: The Wood Awards Web: woodawards.com

Chris Cooper wins top prize at Somerset Guild exhibition

Chris Cooper was named Overall Winner at the Somerset Guild of Craftsmen Furniture Prize Exhibition for his Circular Cabinet making it two in a row for the student at Rowden Atelier Woodworking School (see previous page). The Furniture Prize Exhibition began seven years ago, when the Somerset Guild of Craftsmen set a challenge to students of Bridgwater College to create the finest piece of work for the year. This year there were entries from five schools: Bridgwater College, City of Bristol College, Cornwall College, Williams and Cleal Furniture School and Rowden Atelier Woodworking School. The Exhibition was sponsored by Axminster Tools & Machinery and Friends of Somerset Art Works.

The exhibits were judged in two categories, Part Time and Full Time and the judges awarded a first and second prize in each category, together with a prize for the Overall Winner. Chris Cooper's Circular Cabinet set an exceptionally high standard in both design and craftsmanship and was awarded first prize in the Full Time category as well as being named Overall Winner.

Ali Buchan from Williams and Cleal School won the Popular Choice award and Second Prize in the Full Time category with his Jurassic Coast Coffee Table. The first prize in the Part Time category was won by Olly Christian, from the City of Bristol College, with the Six Seater Dining Table and Family Space, while Beth Noy from Cornwall College took second prize for her triangular trinket box featuring an Oriental-style lid.

This annual event is set to grow as it seeks to attract students from schools and colleges beyond its immediate location in the south west. Look out for our Somerset Guild Furniture Prize gallery in *F&C* 264.

Contact: The Somerset Guild of Craftsmen
Web: www.somersetguild.co.uk

Chris Cooper with his Circular Cabinet and certificate for Overall Winner

Ali Buchan's Jurassic Coast Coffee Table won the Popular Choice award

PHOTOGRAPHS BY STEPHANIE SNOOKS/AXMINSTER TOOLS & MACHINERY

Beth Noy's triangular trinket box won second place in the Part Time category

Festool's pedal power leads to fundraising success

Festool is on its way to raising more than £25,000 for the British Lung Foundation (BLF), thanks to pedal power. The company launched a Cycle Challenge over the summer as part of its 'Breathe Easy with Festool Dust Extraction' campaign, featuring Wattbikes on the UK roadshow as part of the European tour. Three lucky participants won £500 of Festool prizes for biking the fastest mile, three miles and five miles.

Phil Elson, managing director of Healy's Tools in St Albans, very generously trebled the money collected throughout the 15 stops across the UK and Ireland.

Featuring Festool's premium range of tools, the roadshow truck provided visitors with the opportunity to use the tools and talk to a team of experts. Visitors got a sneak peek of upcoming products, as well as Festool's complete range of dust extractors that help safeguard a dust-free work environment.

As part of its fundraising initiatives, Festool has sold more than 100 cycling tops through its eBay page: http://bit.ly/Festooltop. The money made from the limited-edition cycle shirts and the roadshow will go towards research into life-threatening lung diseases, as well as help provided by the BLF for those living with conditions like chronic obstructive pulmonary disease (COPD), idiopathic pulmonary fibrosis (IPF), mesothelioma, asthma and lung cancer.

Festool Marketing Manager Jonathon Burcham said: 'The sad truth in our industry is that tradespeople are four times more likely to contract asthma compared to other workers. The HSE says tradespeople must always use dust extraction but we know that's sadly not always adhered to. We've been promoting the importance of safer, dust-free working conditions with the help of the BLF for the past couple of years and our latest campaign highlights the importance of lung health amongst tradespeople who are most at risk.'

PHOTOGRAPH COURTESY OF FESTOOL

Festool's Allan Steenkamp and Paul Kirby try out the roadshow Wattbikes

Contact: Festool & BLF
Web: www.festool.co.uk & www.blf.org.uk

Events

Information correct at time of publication, check websites before planning your visit

EVENT OF THE MONTH

North of England Woodworking & Power Tool Show

The North of England Woodworking & Power Tool Show returns with more to see and do than ever before. There will be over 40 top demonstrators each day, including *F&C* authors David Barron, Peter Sefton and Vic Tesolin. The subjects being demonstrated include carving, turning, Japanese woodworking, chair making, sharpening and CNC machinery. There will also be five 'mini' theatres, hand tool workshops, a woodworkers' clinic and over 80 companies exhibiting on the trade stands.

When: 17–19 November, 2017
Where: Hall 1, Great Yorkshire Showground, Harrogate HG2 8NZ
Web: www.skpromotions.co.uk

PHOTOGRAPHS COURTESY OF MELTON EXHIBITIONS

The North of England Show is the largest of its kind in the country

Made by Hand

Made by Hand features 140 exceptional makers from Wales and across the UK selling direct to the public. There will also be workshops, masterclasses and demonstrations of a variety of crafts.
When: 3–5 November, 2017
Where: City Hall, Cathays Park, Cardiff CF10 3ND
Web: www.madebyhand-wales.co.uk

Handmade in Britain

This contemporary craft and design fair offers a great opportunity for some early Christmas shopping. Taking place over three days, the event will celebrate the best in high-end design and craftsmanship from over 100 highly skilled, UK-based designer-makers.

When: 10–12 November, 2017
Where: Chelsea Old Town Hall, King's Road, Chelsea, London SW3 5EE
Web: www.handmadeinbritain.co.uk

Record Power Road Show & Sale at Yandles

With demonstrations taking place throughout the day, this is the place to go for free expert advice on all Record Power and Startrite machines. There will also be exclusive show deals and 15% off all self-select timber.

When: 17–18 November, 2017
Where: Yandle & Son Ltd, Hurst Works, Hurst, Martock, Somerset TA12 6JU
Web: www.yandles.co.uk

Midcentury Modern at Dulwich College

This celebrated interiors show features 60 of Europe's finest vintage dealers alongside 25 contemporary designers. After making their debut at Clerkenwell Design Week, Binocular Design will be taking part in Midcentury Modern, displaying their furniture and lighting designs. Their CC2 chair was actually designed in 1951 by a friend and relative of the Binocular partnership. The designer, Jim Williams, went on to forge a successful career in furniture then industrial design working with G-Plan and Cunard before a long career as a partner of DRU (Design Research Unit). The chair was only a prototype but is now being produced by one of the last remaining specialist chair makers in the UK for Binocular. With an array of furniture, vintage and contemporary textiles, travel posters, cool ceramics, glassware, incredible wallpaper, lighting, stunning jewellery, industrial and original artwork there really is something for everyone at Midcentury Modern.

When: 19 November, 2017
Where: Dulwich College, Dulwich Common, London SE21 7LD
Web: modernshows.com

PHOTOGRAPH COURTESY OF MODERN SHOWS

CC2 chair by Binocular at Midcentury Modern

Courses at Robinson House Studio

French Polishing with Derek Jones, *F&C* Editor: 21–22 October
Wood finishing: 28–29 October
Carbon fibre and modern composites: 30 September–1 October

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Social media dashboard

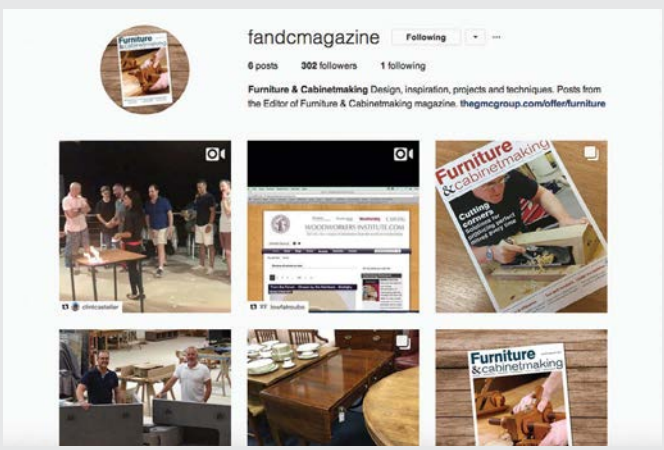
Bringing you a round-up of the best from the online world plus a selection of the latest projects from our readers

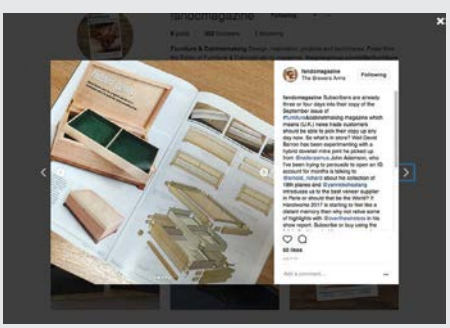
In this section of the magazine we bring together the best furniture and woodworking related content from social media. Here we'll recommend who to follow, where to comment and which online communities to join. We'll also feature readers' letters, comments from the Woodworkers Institute forum and pictures of readers' work. If you'd like to see your furniture on these pages, email derekj@thegmcgroup.com

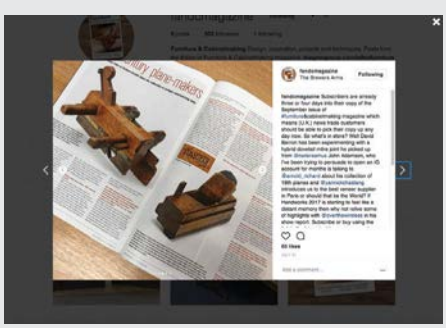
Instagram: F&C magazine

We finally have our very own Instagram account! As well as previews of new issues, we'll be uploading bonus photos and videos from many articles. See Derek Jones' article on page 30 for more about this exciting development. We hope to see you on Instagram soon!

Address: fandcmagazine



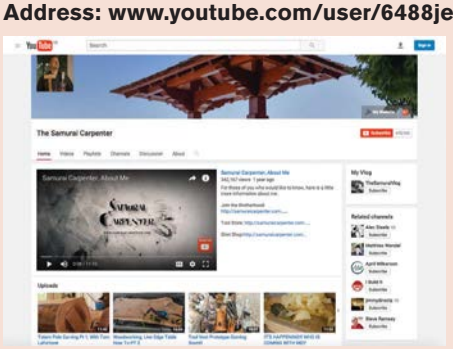


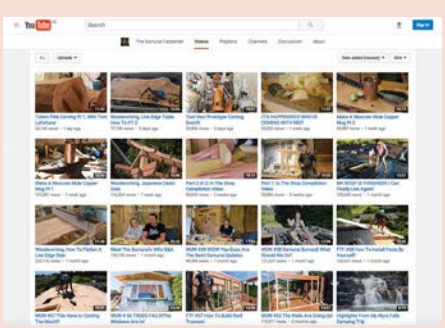


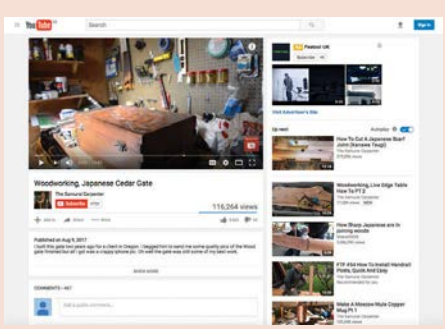
YouTube: The Samurai Carpenter

The Samurai Carpenter is not, as you might imagine, an ancient Japanese warrior, but is in fact Canadian woodworker and Japanese tool enthusiast, Jesse de Geest. His 11-minute 'About Me' video gives a good introduction to his background as a self-taught woodworker. As well as Japanese woodworking, his videos also cover traditional Canadian woodwork, such as totem pole carving.

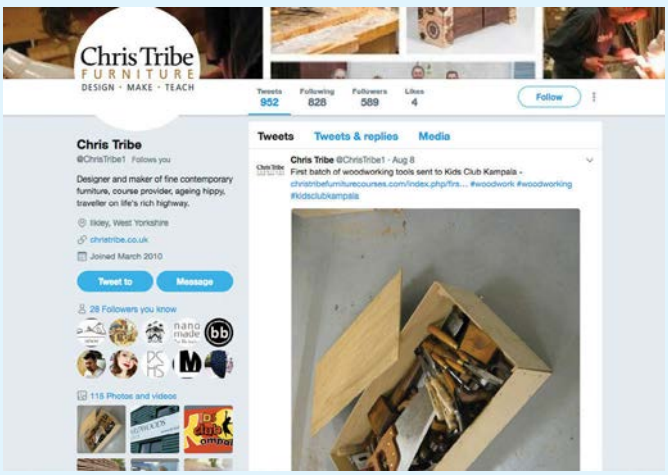
Address: www.youtube.com/user/6488jesse

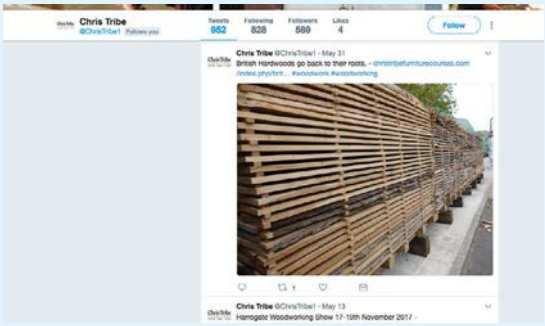






Twitter: Chris Tribe





Designer-maker, teacher and self-described 'ageing hippy' Chris Tribe shares his latest projects on his Twitter feed. You can also keep up to date with all his workshops and see what his students have been making under his expert guidance.
Address: @ChrisTribe1

Projects we love

Here we highlight the latest furniture and woodworking projects from around the world that we think deserve to be shared with our readers. If you're a member of a collective or a student group and would like to see your work here, then submit a story to: **derekj@thegmcgroup.com**

NEJ Stevenson's Garden Museum cabinets

NEJ Stevenson, bespoke furniture maker and Royal Warrant holder, recently completed a commission to design bespoke display cases for The Ark Gallery at the newly reopened Garden Museum in London.

NEJ Stevenson's display cabinets have been carefully designed as part of the Garden Museum's Development Project, in order to house a number of precious artefacts loaned by many of the country's great museums. The bespoke cabinetry was completed in a style appropriate to the museum's 17th-century collector, John Tradescant, whose original museum of curiosities inspired the gallery's concept design by Alec Cobbe.

The cabinetry comprises a single run of five display cases, each 6m long, and two individual cabinets. One cabinet houses a statue and the other is formed of two glass displays, one on top of the other. NEJ Stevenson crafted the cabinetry using museum-grade sheet materials and hardwood, with a hand-applied paint finish. The company's precise attention to detail and exceptional craftsmanship has delivered an elegant result, in a commission that spanned six months from order to completion.

Celebrating the history and design of gardens, The Garden Museum in Lambeth was relaunched in May this year after an 18-month renovation. The building itself is located in the church of St Marys-at-Lambeth, which is the resting place for the 17th-century plant hunters John Tradescant, and his son John Tradescant the Younger. These renowned gardeners collected plants and other curiosities from across the globe, which later became the basis of the Ashmolean Museum in Oxford.

The ancient church is now home to a modern space for exhibitions and events, which can now display much more of the unique collection of around 6000 objects, assembled over 40 years. Designed and made specifically for The Ark Gallery, NEJ Stevenson's custom-made cabinets house 20 artefacts and artworks.

Neil Stevenson, Founder and Managing Director of NEJ Stevenson said: 'We are delighted to have been chosen for such an interesting project. The Garden Museum offers visitors a glimpse into the uniquely British love affair with gardens, and we hope that our work on this project will add to their enjoyment when visiting the Museum.'

For more information, visit: www.nejstevenson.co.uk

PHOTOGRAPHS BY JOHN CHASE

PHOTOGRAPHS BY LIAM THOMAS

A local icon remade

Liam Thomas combines careful study and accurate jigs to make a replica befitting the original

Even in original purple vinyl there's no denying this chair's distinctive style

It was while sitting on a tram one morning heading to the city of Melbourne that Grant Featherston became inspired. The story goes that, while watching the world go by, Grant absently tore and twisted his tram ticket; the shape born out of this day-dreaming went on to become one of the most iconic pieces of Australian mid-century furniture, the Contour Chair.

Damaged legs are a common sight on Featherston chair bases

This chair has become synonymous with post-war Australian modernism, being produced in a number of styles and guises up to the 1980s. Featherston's motto 'minimum of materials, maximum of effect' is clearly expressed in the chair's stylish design. However, as with many pieces during this time that stretched the boundaries of existing manufacturing processes, the chairs are not without their flaws.

Legs akimbo

Whether it's a loose or damaged leg, a poorly repaired leg, a missing leg or a chair without an entire base, Featherston chairs are a common sight in my restoration work. This example was found, sans base, by a local upholsterer who commissioned two new bases to fit this chair as well as another for a client.

An original chair missing its base

Reproduce or reinvent?

There are several factors that contribute to the slow deterioration of a Featherston base; slender legs, combined with a tenon cut a little too deep into the leg and a low sitting height mean that it's only a matter of time before one too many bums are plonked down just one too many times. (Plonking, it's a trade term!) The shoulders on the rails of the original chairs were usually coped to meet the turned leg. Not having any suitable way to achieve this, a housed shoulder was chosen as an alternative. With this in mind, a revised leg to rail joint was tested using a sliding dovetail, the shoulder housed into the leg. Both this and a housed tenon were produced for the client to evaluate; alas they chose the more traditional in appearance, housed tenon option.

Not much material left at the end of the tenon

Housed tenon and housed sliding dovetail joinery options

Time spent equals time saved

Although a relatively simple design at first glance, the timber base of a Featherston chair is actually quite complex. A compound angle half-lap connects the two rails, onto which are joined two turned, angled legs with visible joinery. This required some careful measuring and full-sized templates were produced. While it can be useful for packers and glue spreaders, for a dull brown material 6mm MDF really shines when it comes to full-sized layout drawings. Another chair base was found, from which all the important dimensions and angles were taken and then drawn up on a piece of MDF. Similarly, using some Vernier callipers, the critical dimensions of the front and back legs were noted down and drawn onto MDF.

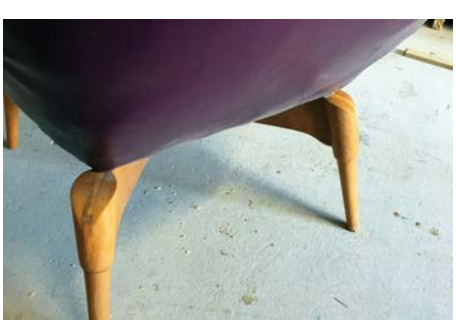
Dive in legs first

With the leg joinery decided it was time to prepare the timber. The original chairs were made using folded plywood for the top and stained coachwood (*Ceratopetalum apetalum*) for the base. Not being a commercially available timber, we chose mountain ash (*Eucalyptus delegatensis*), often described by its trade name Victorian ash, instead of coachwood. It is similar in weight and colour although slightly more open grained.

Stained coachwood was used for the base

Jigs for jigs

A simple router jig was designed to cut both housing and mortise by utilising a 24mm guide bush fitted to a DeWalt plunge router (see guide bush sidebar on page 25). The jig, made from chipboard, is first set up to cut the housing using a 16mm diameter bottom trim bit. Some care is needed to make sure the jig is centred correctly on the legs, this can be done in a number of ways but I used another jig to do the alignment. This jig is made from two pieces, the first is cut to the same width as the legs, in which is housed another piece the same size as the jig slot. This locates in the jig slot, then the jig fences are clamped either side of the main piece allowing them to be accurately secured.



The rear legs subtly show off the joinery

DeWalt router with guide bush

Jig centring jig

Making full-sized templates

The centring jig locating in the router jig slot

Jig fences clamped in position

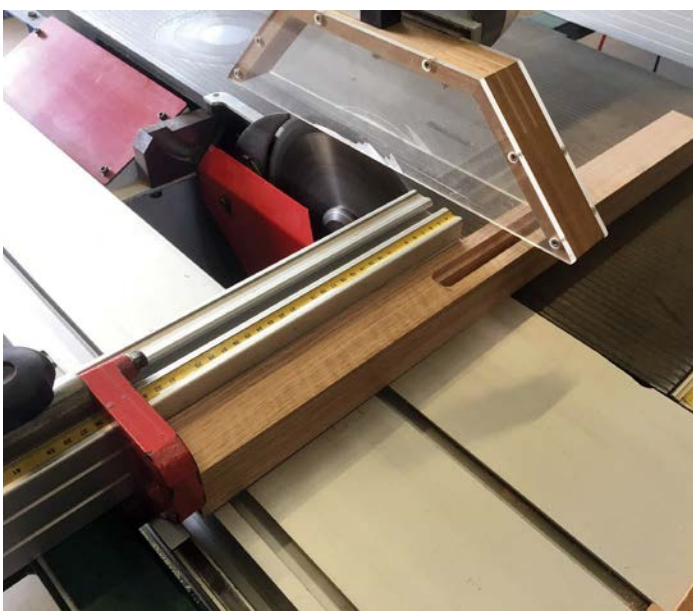
Home and housed

In an effort to improve efficiency and stability the leg blanks were machined with two legs in the one length. This allows for greater jig surface area and useful work holding as well as being able to rout two legs at the same time. The leg blank was cut oversize, leaving 10mm in the middle for cutting on the tablesaw. The marking out is done from either end, ensuring each leg produced will be the same. With the mortises marked, I drill out much of the waste on the drill press. This doesn't save much time but extends cutter edge life of the router bit by having less material to remove. The leg blank is held in the vice, the jig positioned and clamped to the leg, and once the depth of cut is set the routing can begin.

LEFT: Marking out the legs
ABOVE: Leg blanks, mortises drilled out
RIGHT: Routing the rail shoulder housing

Same jig but more

The same jig was used to cut the mortise, this time with an 8mm straight router bit. By using the template formula I knew I needed to add some material to the walls of the jig slot to achieve a 10mm-wide mortise. Some scrap bin material was machined on the thicknesser, cut to size and affixed to the edge of the slot with doubled-sided tape. All the legs were mortised and then released from the blank by setting the cross fence stop to the desired length, then cutting from either end to produce the two legs per length.



RIGHT: Material added to reduce the slot size for mortising
FAR RIGHT: Cutting out the legs. Note the use of an independantly mounted crown guard

Tenon shoulders on the saw

Before turning the legs it was time to cut and fit the tenons to the legs. Using the MDF template, the rails were machined and cut overlength, with the corresponding angles, to allow extra material for the tenons. Using the angle from the template the tablesaw fence was set to cut the tenon shoulders both front and back. This process involves setting up the angle fence with the end of the rail blank against the rip fence and the blade height lowered to just below the final shoulder depth. All shoulders are cut on the same setting. A few additional kerning cuts are made to remove the bulk of the material. The tablesaw angle fence is then swung back in the opposite direction; with the rip fence kept at the same setting it will yield an identical shoulder on the opposite face of the rail at the same angle. With all of the tenons cut roughly to size on the saw, a router and fence was used to refine the tenon thickness and final fitting done with a knife and paring chisel.

The angled tenon shoulders cut on the saw

The rail itself is used to reset the fence angle


Knife run along the shoulder


Paring for a fine fit


Test fit of housing and mortise

Part-time turning

I'm not exactly a turning expert, but these legs are a fairly straightforward job on the lathe, the shoulder transition being the only breath-holding moment but that gets easier after each successive one. The real issue is in producing a clean surface around the pre-machined housing and mortise. One way to achieve this is by inserting a sacrificial piece into the housing. A new jig was designed that would be used to hold and locate the leg in the lathe scroll chuck, as well as hold a sacrificial piece in the housing. A number of sacrificial pieces were machined up, a new piece being used for each leg. With the jig ready, each leg was turned based on the templates.


Turning the legs on the lathe


Lathe work-holding jig with sacrificial insert


Lathe jig with leg in position

Demystifying the guide bush

Here is the formula used to create a guide bush template. The resulting number is used to create the slot in the jig, or another way to look at it, the two pieces either side of the slot that make up the negative space. These pieces can be cut accurately on the tablesaw if using manufacture board material or with the thicknesser using solid wood.

Part 1

Desired housing/mortise width	21mm
Cutter diameter	- 16mm
Template add on	= 5mm

Part 2

Guide bush diameter	24mm
Template add on	+ 5mm
Template slot width	= 29mm


Fitted to the reupholstered top

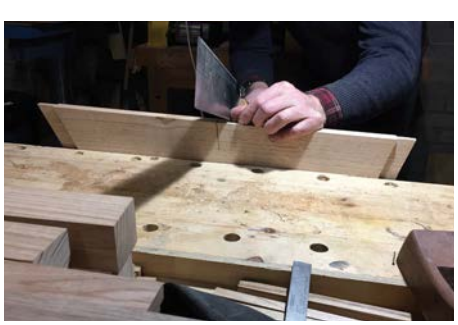
Compound half-lap by hand

The centre half-lap joint requires careful marking out, the position and angles were all taken from the MDF templates. It is important to note the two inside front faces as this joint, like any compound angle joinery, is easy to lose track of. The joint is marked out with a knife; one edge is marked first, then the opposite edge, being the thickness of the material, is marked. A loose fit will come about if the joint is marked out simply from creating a knife line either side of the material, a close fit can be achieved after the first edge is marked, move the material over to just cover the outer edge of the first knife line, then mark the second edge.

As always with half-lap joinery, it's important to orientate your rails to be cut correctly, or put more simply, one part to be cut from the top, the other from the bottom. The joints were cut a little oversize to the line with a Japanese Ryoba saw and pared back with a chisel. Using a handsaw for this kind of joinery is often less stressful as it is a slower process that is easier to control than cutting with a router or tablesaw. I'm a big advocate for a balanced mix of power and hand tools, a good workshop should be able to incorporate both into everyday work. For compound angles, the resulting joins came out better than I had hoped for.


Half-lap knife lines marked out


Ryoba saw cutting almost to the line


A little extra light can help with sawing


The half-lap joint cut, pared and test fitted

Curved rails

With the joinery completed and test fitted to the turned legs, it was time to cut the curved rail profiles. Again the templates were used to mark out the shape, which was then cut oversize on the bandsaw and the resulting edges were cleaned up using spokeshaves, working to the line. A little further tidying up was done on the inside curves with a bobbin sander.

ABOVE: The bandsaw table angled to match the half-lap LEFT: Cleaning up bandsaw marks with spokeshaves

A mark of best practice

Even though most of the joinery for this job was done by machine I still prefer to mark out the joints prior to machining. This helps me to ensure the jigs are still set up and cutting as they should. Two marking gauges, with their pins filed into knife points, one away from the fence and one towards allow all the necessary layout line options. The knife point, combined with a satin-finished steel rule can achieve very accurate results. The centre point of the legs was established without the need of a rule, a gauge set close to the centre, and marked from either side will reveal the true centre. This can be refined by gently tapping the gauge on the bench, on its head to close up the setting or on its tail to increase the setting.

Fitted to the reupholstered top

Setting a marking gauge

Pre-finishing

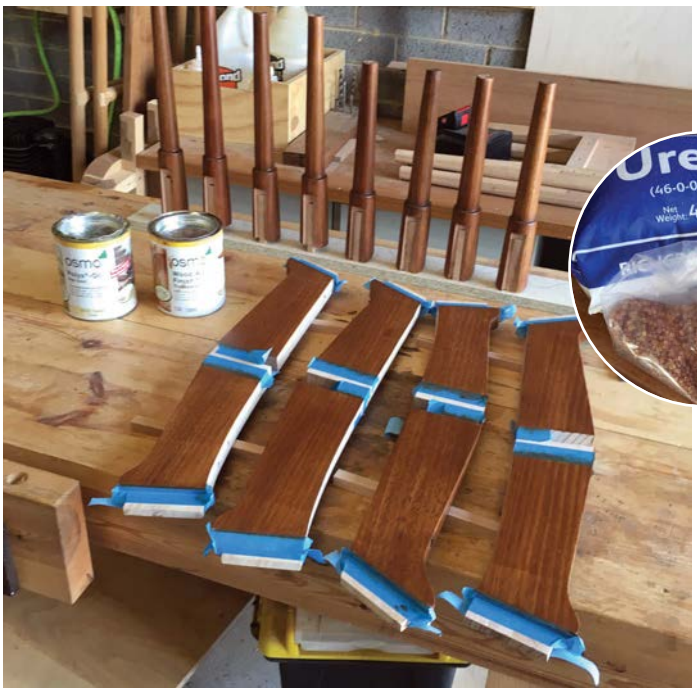
A smoothing plane was used to quickly clean the two faces of each rail, taking care not to affect the half-lap surfaces. A light arris of all edges was done, then all joinery surfaces, including the housed shoulder were taped up with blue painter's tape prior to pre-finishing. Two coats of Osmo Wood Wax (cognac) were applied, with a day left in between reapplication. Being relatively new to this Osmo product I've found it quite good, it has a stain incorporated into the wax that I find gives consistent results.

Rail curves after being cut and tidied

Glue-up

It pays to keep custom-made clamping blocks. I made a pair of angled blocks for a repair job several years ago and they have come in handy ever since. These, coupled with the Bessey angle clamp heads, which pivot to match the angle on the workpiece, made gluing up the two halves a stress-free process. In a nod to the original bases, as well as furthering my own knowledge, I used some shop-made liquid hide glue for the job. It worked well giving more than enough time to assemble the parts and get the clamps into position and tightened.

With the hide glue cured and the two halves out of the clamps, it was time to assemble them and add corner blocks to both internal sides.



LEFT: Taped up and stained ABOVE: You can never have enough clamps
INSET: Shop-made liquid hide glue

Finished

The bases were given a final coat of Osmo Polyx satin, some leather feet were glued on with hide glue and they were ready for fitting to the reupholstered top. F&C

Corner blocks glued and clamped

Bases finished

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SJÖBERGS workbenches - made in sweden

Looking for clues

Derek Jones takes *F&C* to the sales for a quick lesson in dating

@fandcmagazine

It's been a while coming but we've finally got round to launching an *F&C* account on Instagram aimed at topping up our regular published content with a more informal stream of tips, updates and general comment. It's where you'll find the occasional video clip relating to articles in the magazine and other snippets that, although valid, don't always make the final cut. It's also a place where you can comment and interact with other readers and yours truly more or less in real time. Time zones and other restrictions permitting!

To get the most out of this feature you'll need to open an account yourself and access the content via a smartphone or tablet. It just requires a valid email address and a password that you generate and only takes a couple of minutes. I've put this article together to show the sort of thing I have planned for *F&C* on Instagram.

A sale of the centuries

Auction rooms are a great opportunity to get up close and personal with period furniture and unlike most museums you can open drawers, lift lids and crawl around on the floor to get a better look at things without attracting too much attention or worse, being asked to leave the premises. My local sale room has weekly sales for general items and quarterly ones for more valuable artifacts. The entire catalogue for each sale is held online where you can place bids in advance or if you prefer you can join in the action with live bidding. Viewing day is Saturday at my local and if I'm at a loose end I grab a bacon sandwich and a coffee from the catering van and kill some time. A typical find looks something like this.

Regency work table

Given its lacklustre appearance you could easily pass this over as a fairly plain work

When was that exactly?

Regency style is associated with the reign of King George III, who was deemed unfit to rule in 1811. His son, another George, ruled as proxy as Prince Regent until becoming King George IV on his father's death in 1820. Strictly speaking, Regency style is contained within the Georgian period but as the prince was a prolific patron of the arts both before and after ascending to the throne, it's his influence to which we refer.


1 Sombre ebony inlay


2 Tight where it counts


3 No attempt to conceal the joints


4 Not the original lock


5 Mahogany where it's seen and oak where it's not


6 Only a tiny piece of edge banding is missing

7

table. But things are rarely what they seem when you get up close and start digging around. Everybody likes to study drawer construction and rightly so, there's so much personal detail crammed into a small space that learning to read them is almost like shaking hands with the maker. The auctioneers have labelled this up as 'Regency', which could mean either 1811 to 1820 or a couple of decades earlier or later than that depending on your point of view.

Ageing disgracefully

Images 1, 2, 3, 4: For my liking there's not enough flare in this piece for it to be high Regency i.e. post 1815 – when the Prince Regent was at his most extravagant. The ring turned legs are much more in keeping with the earlier Georgian style; somber and formal. The decorative inlay and ebonising are also quite reserved. But that's just my opinion and it's quite possible that the piece was made in a style respecting the transition or passing of a monarch.

For a student of furniture design there's so much to see in a small piece like this. There's no attempt by the maker to kiss the baseline of the lapped dovetails on the inside of the drawer but the joints are tight where it matters and the structure is none the worse for it. What's not in keeping, however, is the lock on the lower drawer, which is likely to be a replacement. It's not fitted that well and the escutcheon doesn't match with the one in the drawer above. The use of steel screws, however, is correct for the period. We make such decisions nowadays based on aesthetic principles; brass hardware typically means brass screws so everything matches and on showy pieces like writing slopes or display cases, there's a good case for doing so. Elsewhere though it's unnecessary and if you're looking for signs of age and authenticity in period furniture, you'll see more steel than brass.

The benefits of brass

Appearances aside there are some practical reasons why using brass screws makes a lot of sense. Although brass will tarnish, it will not rust or react with the tannins in the timber; a process that will turn the material around the thread into dust eventually causing the screw to work loose.

Beneath the surface

Images 5, 6: One of the most fascinating aspects of this piece and what drew my attention in the first place was the nature of the split in the top. Splits aren't that uncommon in period furniture obviously, but this split doesn't match the direction of the figured grain meaning that the top surface is a veneer. The ground work for all three leaves and some of the framework below is oak suggesting that the mahogany used to cover it was either not yet in cheap supply (that's a relative cheap by the way) or that it was intentionally made to a lower spec. But my gut feeling is that this little gem is lying about its age and I'm inclined to think the purchaser thought so too.

Sold

Image 7: The good news is that our 'Regency work table' went past its reserve price and sold for £240. F&C

PHOTOGRAPHS BY DAVID WAITE

A whisky cabinet for the connoisseur

David Waite uses his new skills to make an Arts & Crafts-style cabinet

Having completed our formal training in hand tool techniques and wood machining, my fellow students and I gained even more freedom to express ourselves by taking on more complex self-design projects. I decided that my next piece would be a cabinet on a stand that would demonstrate the skills and craftsmanship I had developed at the school to potential clients. This project was also an unashamed celebration of the Arts & Crafts movement that I had so fallen in love with during my time in Lakeland.

Design considerations

Early consideration of the function and form of the cabinet was an important aspect of its design. My long-standing appreciation of single malt whisky inspired me to create a small display cabinet that would hold up to six bottles of fine malt accompanied by a set of beautiful crystal whisky tumblers I had been given as a birthday present by my family. During early design discussions at the school, Oliver Waters suggested I consider making the cabinet bow fronted with traditional curved frame and panel doors to provide elegance and refinement as well as allowing me to explore another cabinetmaking technique. I liked the idea and decided to extend it by using curved textured glass for the door panels, which would provide an interesting feature when illuminated from within and hint at the cabinet's contents.

Careful consideration was given to the size and proportions of the cabinet to ensure it was tall enough to incorporate six whisky bottles of varying heights with room above to accommodate two glass shelves for the tumblers. Another important consideration was to ensure the correct size of the stand in relation to the cabinet. I found it difficult to judge these proportions using the computer alone and instead opted to build a full-scale model using good, old-fashioned cardboard and sellotape. This is a surprisingly quick process and allowed endless tweaks in the proportions to be made. It was also helpful in revealing the potential for the long, tapered legs of the stand to rack under the weight of the cabinet and the need therefore for some sort of stretcher to be incorporated. Taking into consideration the possibility of racking when designing furniture and incorporating elements to combat has been a real learning point for me during my time at the school and something I would have previously paid little attention to.

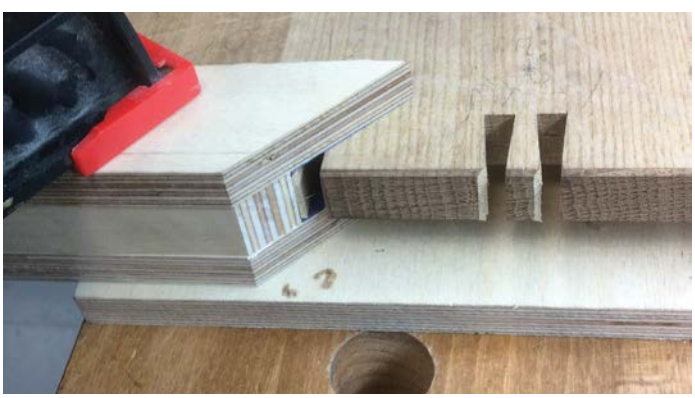
Given my desire to celebrate the Arts & Crafts style in the piece, I opted for English oak (*Quercus robur*) as the main timber of choice with any detailing to be done using a fine piece of English walnut (*Juglans regia*) I had manged to source. Hand-cut show joinery, in the shape of protruding dovetails with chamfered edges and protruding wedged mortice and tenons, would be the other prominent design feature of the cabinet in celebration of the fine work of local Kendal craftsman Arthur Simpson.

My final design included curved, intersecting laminated stretchers in oak and walnut, meeting the four tapered legs with bird's mouth joinery. The stand also incorporated a chamfered plinth and hidden drawer all curved with radii to match that of the bow front of the cabinet above it.

Cabinet construction

Components for the cabinet's carcase were carefully selected and dimensioned from quartersawn 40mm English oak. The protruding through dovetail double pin pattern to be used to join the carcase was carefully laid out full size on a piece of card and this was then used as a template to mark the tail board sides of the carcase. Dovetails were cut in the usual manner by hand, with the cut tail boards being used to mark all the pins' positions on the top and bottom components of the carcase. To achieve a uniform 45° chamfer on the 2mm protruding pins and tails, a simple 45° saddle jig was prepared from ply that fitted snugly across the ends of the cut tails and pins and allowed paring of the cross-grain chamfers with a sharp chisel. It was far easier and more accurate to complete all this pairing before the joints were assembled. A 10mm rebate was also cut into the back edge of each carcase component to house the frame and panel back. The curved bow front was cut on the front edge of the top and bottom components using a template guided router cutter ahead of carcase glue-up.

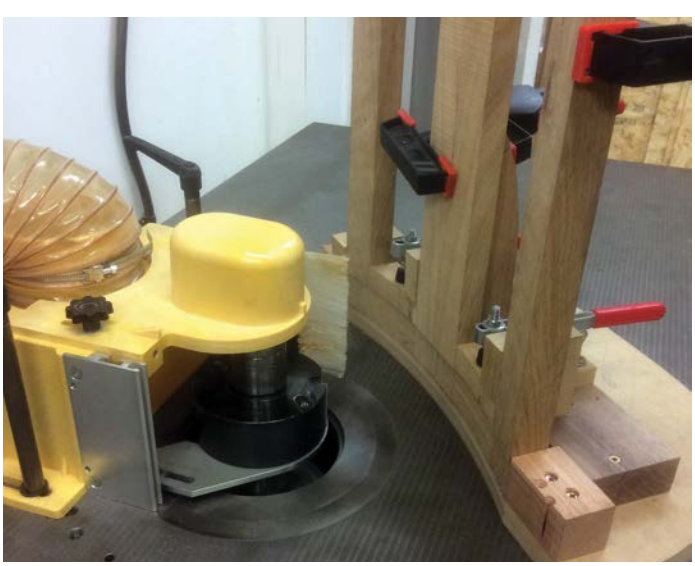
Hand-cut protruding through dovetails with chamfered edges: a key feature of the cabinet's design



Paring jig used to cut the chamfers on dovetail pins and tails before assembly

Frame and panel curved doors

My approach to door construction was to joint the stiles and rails together first, to form two flat doors, and then to shape the curve on each. The doors were modelled on the computer which allowed component thicknesses and all necessary angles and radii to be determined. The stiles and rails were cut to dimension and then joined with the Domino jointer. Two jigs, one convex and one concave, were then prepared to hold each assembled door vertically and the spindle moulder was used with a rebate cutter and ring fence guide to shape the top and bottom sections of each door following the jigs curved base. This left a central unshaped section on each doors stile which was easily blended to the same curve using a block plane and cabinet scraper. Before glue-up, a 10mm rebate was cut into the back of each door frame component for the curved glass using a bearing guided rebate cutter. Some 5mm beading was cut and shaped to fit the rebates with the glass in place and brass panel pins used to fix everything securely.



Jig holding doors ready to be shaped on the spindle moulder with rebate block and ring fence

Completing the cabinet

A frame and panel back were constructed for the cabinet with a 1mm shadow gap around each of the four floating panels housed within the frame. A hidden channel was routed in the central stile to allow cables for LED lighting to be run up from the cabinet base. The cabinet doors were carefully let in to the carcase sides with brass butt hinges and stops and rare earth magnets inset in the top of the cabinet and doors. Internally, the carcase was lined with a cedar of Lebanon (*Cedrus libani*) base to provide a fragrant smell to the interior. An oak plinth with walnut string detailing was added to provide a raised platform for the whisky bottles at the back to stand on. 5mm holes were drilled in the sides of the carcase at the appropriate height for the shelf support pins and the two glass shelves of the same design as the door panels were fitted. To complete the cabinet construction, two delicate handles and support pins were turned from walnut and oak.

Tapered legs and dust panel dry clamped and awaiting the fitting of the stretcher

Cabinet stand

I used 75mm-thick oak to make the stand. After dimensioning all components to size, the leg tapers were applied using the spindle moulder and a tapering jig and the curved side and back rails were shaped on the same machine. The electrical lighting power cable was hidden in a channel routed down the back-left leg with a small exit hole for the plug cable 200mm from floor level. Tapered through mortices were cut in the front legs and stub mortices on the back legs, and a groove was routed in the side rails and back ready to accept a framed dust panel. This frame was made from solid oak Domino jointed together with a veneered ply oak panel inset. The dust panel had a corresponding groove cut in its sides and back and plywood splines were used to join it to the stand. Finally, the through and stub tenons were cut on the side and back rails with allowance made for the walnut wedges on the front tenon joinery. The stand was then dry cramped together in readiness for fitting of the lower stretcher.

Laminated stretcher

A rectangular piece of plywood with notches cut at its corners was used to explore where to position the stretcher in order to achieve the correct proportions with the rest of the stand. Next, the computer was used to accurately model the stretcher's dimensions at this height such that its bird's mouth joinery would intersect perfectly with the stand's tapering legs and so that the walnut inlays in the stretcher's oak laminations would intersect crisply. Some 2mm oak and walnut lamination strips were then cut on the bandsaw and passed through the wide belt sander. These were coated with epoxy resin and bundled together and band clamped around a former of correct radius to form each of the two curved stretcher components. To join the two curved components to form the stretcher, each first had a flat created equally of fixed length about the curve's centre point with a router and straightedge. A small mortice was then cut by hand through each component at the centre point of the flat and a matching tenon peg created in walnut and oak which, when inserted into the mortice holes, held the two components together. Finally, the joined stretcher was overlaid on the initial plywood template to allow the notches for the bird's mouth joinery to be marked out and cut with a backsaw and sharp chisel. It was extremely pleasing to find that the completed stretcher's bird's mouth joinery met the stand's legs crisply at the prescribed height. Holes for wooden dowels were then drilled at 45° in the legs and the notched stretcher and the stand were ready to be glued up.

Bird's mouth joint between stretcher and tapered leg

Completed curved stretcher in laminated oak and walnut on top of the plywood template

Curved drawer and plinth

To complete the cabinet stand, a chamfered curved top plinth was created onto which the cabinet would be seated. A mitred frame was first constructed in oak and jointed with Dominoes. This was then grooved for an oak-veneered internal panel, being careful to leave enough of a void to allow the LED lighting junction box and transformer to sit on the upper face of the panel without fouling the cabinet above. The curved front of the plinth was then applied with a template and bearing guided router cutter and finally the chamfer was applied. The plinth was then permanently attached to the side and back rails of the stand with Dominoes and glue.

The components for the drawer sides and back were dimensioned from quartersawn oak for stability. Walnut drawer slips were used for contrast and had grooves machined in them centrally using the spindle moulder to accept the base, which was made from cedar of Lebanon. A scratch stock bead detail was added to each of the slips by hand. The drawer front used 75mm stock to allow for the curves to be machined on its inner and outer faces. Two small flats were first routed onto the inside faces of the drawer front to ensure the flat drawer sides would intersect with the curved drawer front seamlessly. Dovetails were then cut by hand in the usual manner and the curves applied to the drawer's front, back and lower faces using the spindle moulder. Finally, a groove was machined in the back of the drawer front to accept the drawer base and a finger pull routed into its bottom edge. Once glued up, the drawer was fitted into the stand to achieve a piston fit using a freshly sharpened plane to remove final single shavings.

Curved and chamfered plinth with recess for the LED lights' electrical junction box and transformer

Completed stand with curved drawer

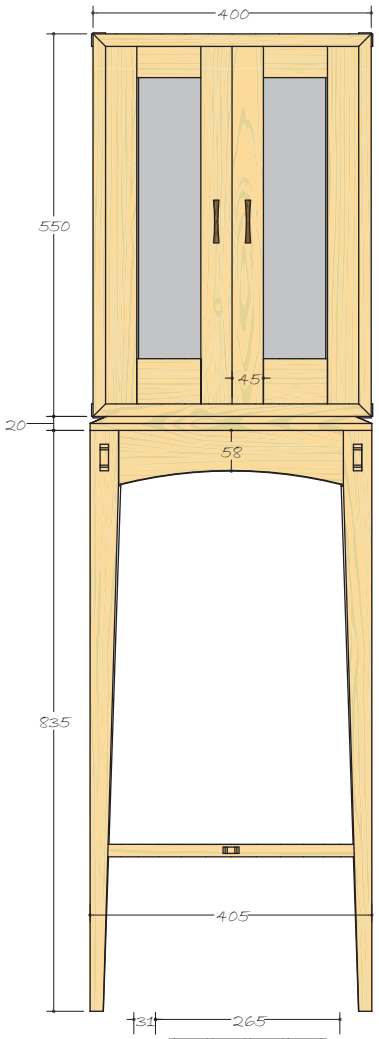
Internal view showing cabinet plinth, glass shelving and LED lighting

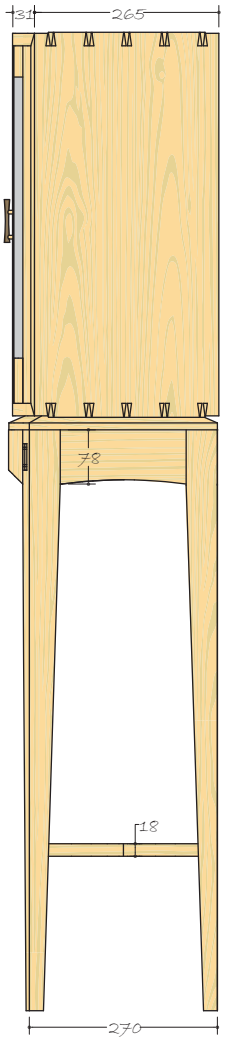
Finishing

The cabinet and stand were orbital and hand sanded to 240 grit with great care taken to ensure the crispness of the joinery on show was maintained. The grain was then raised with hot water before further sanding to 400 grit to complete the job. The external parts of the cabinet and stand had a hand-rubbed Danish oil applied while the internal surfaces were finished with a wax paste only, to allow the fragrance of the cedar linings to permeate throughout. LED strip lights were fitted to the top and bottom of the cabinet, hidden behind a simple oak beading, and a motion-activated sensor switch was inset into the lower face of one of the stand's side rails. This allowed the lights to be switched on and off with a simple wave of a hand under the rail.

Artisan glass

I was delighted to find a local Kendal glass artist, Jo Vincent, close to the workshop. Jo specialises in creating handmade, fused glass and accepted my commission to make the curved door panels and internal shelves. She managed to produce the two door panels with striations in them that complemented the grain pattern in the oak door frames beautifully. **www.jovincent.com**





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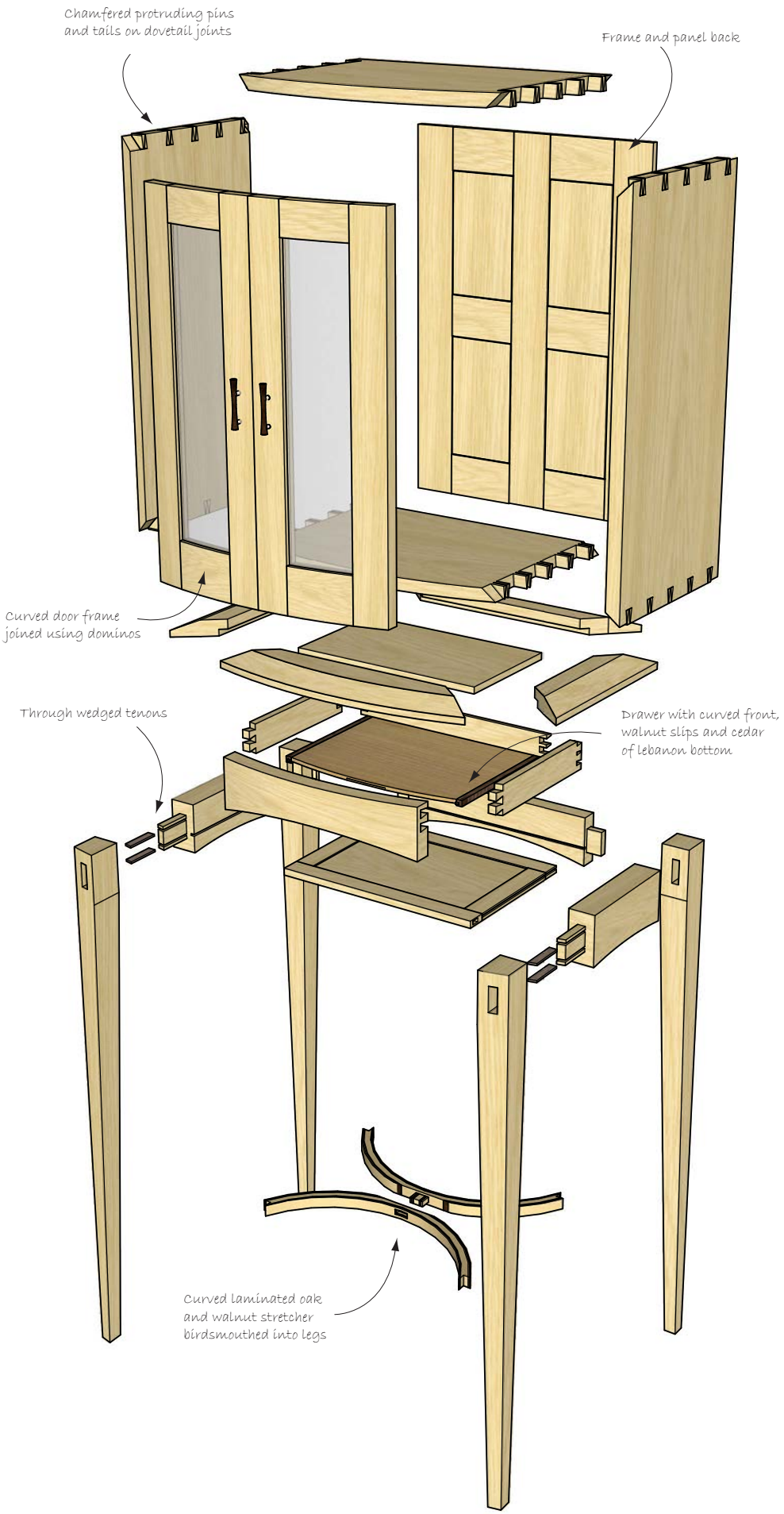

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Grown Out of Rycotewood

Derek Jones selects some highlights from the college's end of year show

PHOTOGRAPHS COURTESY OF RYECOTEWOOD FURNITURE CENTRE

I've got a soft spot for Rycotewood. It was the first college I visited on behalf of *F&C* shortly after I started at the magazine. If I remember correctly it might have been an Axminster Talking Tools event so there were a lot of interesting people to talk to and it left quite an impression on me. Encouraged by what I'd seen I carried on going to graduate shows for the next couple of years at a number of different colleges, but these were difficult times for craft-based courses and each year there were fewer to choose from.

Around about this time a beacon of light in the shape of a national school of furniture started to form on the horizon and folk like me anticipated a bright future for students entering the furniture industry. In all the excitement Rycotewood suddenly changed its name to something so obscure as to mean nothing to anyone outside the area and to a man, everyone I spoke to about it at the time and since, couldn't understand why; it made no sense to distance oneself from a reputation built on decades of outstanding commitment to furniture design and making, for a clean slate.

The national school idea didn't last and as quickly as it arrived it was gone, leaving everyone to fumble around in the haze for a new direction. Some lost their way completely among the friendly fire of progress but Rycotewood reverted back to their old name and to what they do best; equipping students with the skills necessary to enter the furniture-making industry.

Six years on and this year's end of year show, named Grown Out of Rycotewood, was a stunning display of workmanship and creativity, the like of which I haven't seen in a long time. I couldn't be more pleased for the staff and tutors that have dug in deep to make it happen, not just for this year's graduates, but for anyone contemplating a career in furniture. The following pages feature a small selection of the work on display this year. I think you'll agree that congratulations are definitely in order.

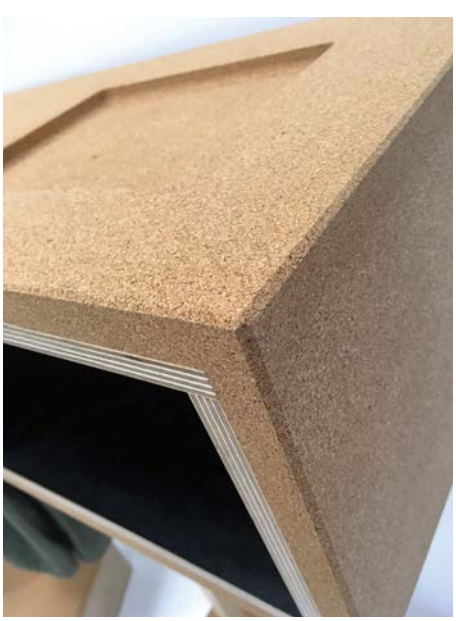
For more information about Rycotewood, visit: www.cityofoxford.ac.uk/our-courses/furniture

Avian Evans-White's Work Space range is designed for disassembly and eliminates the use of non-recyclable consumables by incorporating wedges and sliding dovetail joinery

Work by Joshua Cranswick

Matt Estlea incorporated functional and decorative joinery throughout his traditional Roubo style workbench

City and Guilds Handcrafted Furniture level 3 projects by Thomas Acland, James Venters and Alexander Brown



Detail of 'The Bots' by Edmund Robinson

Peek-a boo birds made from offcuts by Nick Peters

Boxes by Andy Fiedorowicz

Desk and stool by Josh Kenyon

Cabinet by William Ackroyd-Willoughby

Detail of Krenov cabinet by Matt Estlea

City and Guilds level 2 projects by Kyran Turner, Barabas Szabo and Matthew Pegram

Tulipwood bench by Thomas Lilley

Hemp rope detail on Thomas Lilley's bench

Mark Skelton's valet stand

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Panel Sizing Saws

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Precisa 6.0VR-P1	Inc 2m STC + TWE + TLE + pre-scorer (as illustrated)	4.0 / 6.5 + 1.0	110 mm x 1400 mm	£3,250.00	£3,900.00
Forsa 4.0-P1	Inc Pro STC + TWE + TLE + scorer (as illustrated)	NA / 6.5 + 1.0	107 mm x 1600 mm	£3,300.00	£3,960.00
Forsa 4.1-P1	Inc Pro STC + TWE + TLE + scorer	NA / 6.5 + 1.0	107 mm x 2100 mm	£3,800.00	£4,560.00
Forsa 8.0-P3	Inc Pro STC + TWE + TLE + rear support table + clamp + scorer	NA / 6.5 + 1.0	107 mm x 2600 mm	£5,250.00	£6,300.00
Forsa 9.0-P3	Inc Pro STC + TWE + TLE + rear support table + clamp + scorer	NA / 6.5 + 1.0	107 mm x 3200 mm	£5,395.00	£6,474.00

STC = Sliding Table Carriage. TWE = Table Width Extension. TLE = Table Length Extension.

UNDER THE HAMMER:

Ernest Gimson furniture

We look at several lots from Bonhams' Decorative Arts From 1860 auction

Bonhams' recent auction Decorative Arts from 1860 featured artworks in the Arts and Crafts, Art Nouveau and Art Deco styles. Here, we focus on several pieces from the sale designed by Ernest Gimson, one of the leading figures in the British Arts and Crafts movement.

Ernest Gimson was born in Leicester in 1864. He was apprenticed to a local architect in 1881 where he designed some furnishings, but his life changed when, at the age of 19, he attended a lecture by William Morris on the subject of 'Art and Socialism'. Inspired by Morris' ideas on Arts & Crafts, Gimson attended classes at Leicester School of Art and moved to London two years later at the age of 21. Here he spent two years working for the architect John Dando Sedding, whose offices were next to Morris & Co's showrooms. He also became friends with Ernest and Sidney Barnsley and in 1893 Gimson and the Barnsley brothers moved to Gloucestershire to 'live near to nature'. In 1900 Gimson set up a furniture workshop in Sapperton where he worked until his death in 1919.

Writing in the auction brochure, Annette Carruthers, lecturer at the University of St Andrews, said: 'Gimson's high reputation as a furniture designer who, with Sidney Barnsley, created a new style based on traditional forms and celebrating craft skills, is well deserved. He produced elegant, practical and superbly well-made pieces, which pleased his clients and have had an enormous influence on craftworkers and commercial makers up to the present day.'

£10,000

Large walnut chest of drawers with six raised twin panel drawers and round metal loop handles, on bracket feet. Gimson's design for this piece (dated 3 June, 1904) offered the client three alternative drawer arrangements; this option was marked 'Prefer this'. Gimson had an exhibition of his work at the Royal School of Art Needlework in London, in the spring of 1904 and it seems likely that this was one of the orders he received at that time.

£2500

Kneehole writing table made c. 1904. This walnut table has a rectangular top above one long and two short frieze drawers, over two short drawers flanking the kneehole. The metal ring handles are decorated with an embossed line and dot pattern. It has square section legs.

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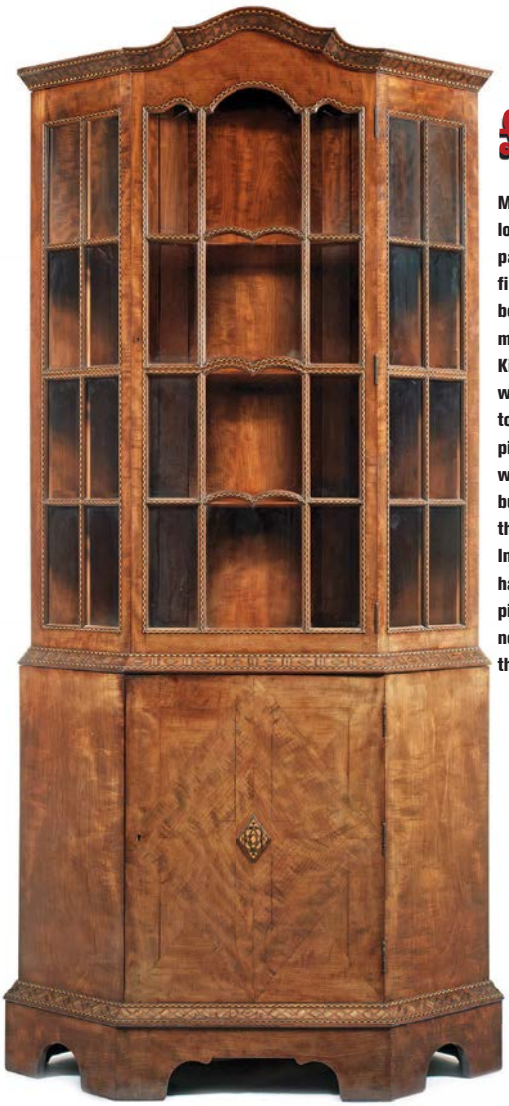

£13,750

Mahogany display cabinet with lozenge, square and triangular pattern inlay in macassar ebony, finished with inlaid chequered beading in holly and ebony. This was made for Gimson's distant cousin Kingsley Gimson in 1916 and the workshop's Job Book records that it took over 1000 hours to make. The piece is typical of Gimson's later work. It is based on early designs but made much more elaborate by the addition of the shaped cornice. In one of his letters Gimson said he had received an order for a similar piece as a result, but that it would not be a repeat as he had 'used up the last veneers of a famous tree'.

£4750

Walnut tallboy chest made c. 1903. It has a pair of panelled doors above four long drawers, with metal ring handles embossed with a line and dot pattern, on stile supports. This is possibly the central section from what would originally have been a three-part item, a tallboy flanked by two wardrobes.

£4375

Oak linen press made c. 1900. It features a pair of multiple fielded panelled doors with a carved sliding bar lock, above four cedar-lined drawers with carved handles, on five bun feet.

Derek Jones meets Shane Armstrong and Paul Wilcox, two regular guys who work hard, play hard and ...

...THINK BIG

When people tell you something can't be done, what they probably mean is that it can't be done at the moment. Or at least that's how some folk respond when the gauntlet is thrown. And if proof were needed that necessity is indeed the mother of invention, well, just look around you. The chances are that everything you can see or touch was at some point in human development considered impossible. This story is about one such development born out of a desire to go where no piece of hardware had gone before.

To Shane Armstrong and Paul Wilcox problem-solving has become an incurable habit; a way of life that underpins their business. Blades Joinery is no ordinary joinery firm, in fact they don't produce an awful lot of what you and I would class as joinery at all, but that's not the story I'm going to share with you right now. Instead this article is about the development of a product that one day will become as commonplace as the one it will replace and you'll be able to tell your apprentices where you first heard about it.

Blades Joinery operate at the very top end of the luxury bespoke fit-out market and have a reputation for making their clients' dreams a reality. OK, where have I heard that phrase before? On nearly every bespoke cabinetmaker's website, that's where. And when you've read it as many times as I have you start to wonder why we're not all living the dream. Well one possible answer is that maybe our clients' dreams lack imagination.

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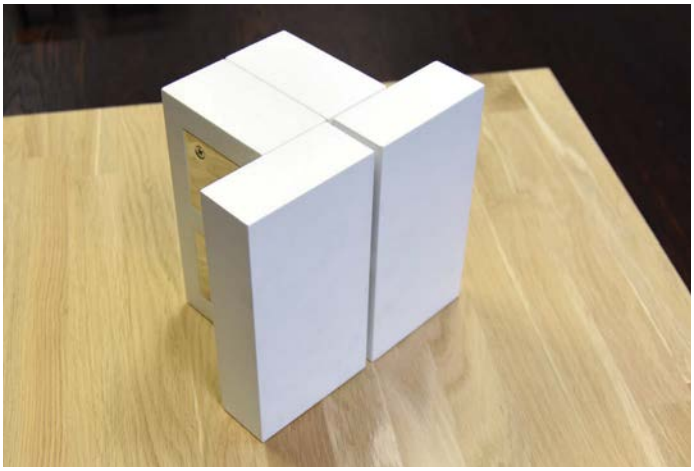


One of the demonstration models for the DIAB-Hinge

All the visible surfaces are finished and come with matching fixings

The problem

Ever since Thomas Chippendale published his *Gentleman and Cabinet-Makers Director* in 1754, furniture salesmen have been using virtual reality renderings to pitch their ideas. The danger with this is that when you get good at the pitch and the renderings become too realistic, you risk taking orders for dreams based on details that don't yet exist. For Blades Joinery an unintentional oversight by the architects had become their problem.

One of the firm's regular clients came up with a scheme for an interior that featured rows of cupboards and wardrobes with 50mm-thick doors butted end to end and planted onto the front of 50mm-thick carcase sides. In itself that's not very hard to do with a mixture of face frames and existing hardware but the clients had another request; could they make it so the doors open within the thickness of the carcase wall (50mm) and remain flush (at 90°) with the inside of the cabinet side with a shadow gap equal to when the doors are closed on the internal corner when the doors are open? I'll grant you, it's a complicated brief that takes a bit of getting your head around, but work on it for a second and you'll see it poses a number of problems. When you've got it logged I think you'll agree it's also an extremely elegant alternative to the clumsy robot looking arms that have been the industry standard for several decades for cabinet doors, high-end or otherwise.

Groundwork

After sourcing every type of off-the-shelf hinge available on the market and working through the permutations, it was beginning to look like the architects' vision might have been a step too far. Adapting existing hardware was quickly ruled out leaving only one option – to design a new hinge.

While Paul held the fort in respect of the day-to-day running of Blades' live projects, Shane took the project on and, after weeks of sketching and generally mulling things over in his head, there was only one course of action left to take; hit the 'shop floor and don't come out until the problem is solved. Taking inspiration from the natural world, the design featured two pivots, similar to the articulated leg joints found in the animal kingdom. 'Knee joints in particular became a focus as there are many examples where they work the other way to ours', Shane explained, 'I just had a feeling this was worth exploring.' The eureka moment eventually came and a full-scale working prototype was created in MDF.

At the time there were no plans to take the hinge beyond its immediate intended use but having designed the product in-house and put it into production, Blades would obviously be able to offer it as a solution in future projects. One by one their existing clients were exposed to the benefits of using the hinge in their schemes and requests started to come in for smaller versions to use on standard gauge cabinetry. Then followed marine-grade stainless steel for the luxury yacht market and eventually titanium hinges for aviation use. Interestingly it was the designers and architects who struggled to see the potential. Fellow joiners and cabinetmakers, on the other hand, latched onto the product quickly. 'Joiners and craftsmen are constantly solving problems and usually see things long before anyone else does,' said Shane.

Despite a view to the contrary, the luxury market remains a healthy trading zone for all manner of sophisticated, well made goods and when Blades decided to take their product to a wider audience, one of their customers (Ron Dennis CBE) had all the requirements to make it happen; financial backing, top level business connections and a shared vision to co-produce a product that would immediately jump to the top of the luxury spec list.

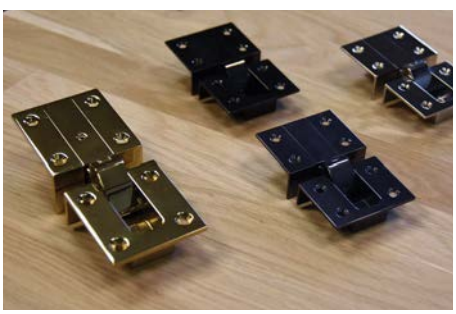
Shane's first working protype of the DIAB-Hinge

The dog in a box

Currently the full range of hinges consists of four sizes and 20 material options and finishes, including gold. As more customers get introduced to the concept, more options are becoming available suggesting that the finish is fully customisable, including the necessary fixings. Naturally, the growing demand has meant up-scaling the production process, which has made the product even more refined. The first hinges were made in the UK by joining several components together to form the body of the hinge. The current design is now milled from a solid billet of metal and the team are constantly re-evaluating the process to make the product better. 'Producing a top quality product isn't really that difficult when you've set that as your standard. If something is not quite right, you haven't completely solved the problem,' said Shane. 'Remaining commercially viable in the process is the key,' added Paul, 'and it's how we run Blades.'

What I liked about talking to Paul and Shane, apart from their infectious enthusiasm, is their ability to disconnect from outside influences and focus on the goal. In that respect the product is never finished, the problems are never completely solved and perfection is always just out of reach.

Nothing sums up this project better than the acronym by which it's known. Simple but sophisticated, the Dog In A Box Hinge is proof that the solutions we have now are stepping stones to better solutions that are there for the taking if you know where to look. The DIAB-Hinge is scheduled for mass production in an attempt to make it affordable for general use and perhaps even a viable option for retro-fitting into existing installations. If you want the appeal of butt hinges with the convenience of articulated geometry, then look no further.



Gold, bronze and chrome versions of the hinge

Attention to detail at every stage

Paul Wilcox, top, Shane Armstrong, below; two of the hardest working, infectiously upbeat guys in the business

On paper

Clive Gigney CAD technician at Blades Joinery and DIAB-Hinge

Developing a product for release into a global market means lots of paperwork and financial backing commensurate with your ambition. Establishing a patent for a single item destined for release into a single market isn't that difficult to do and doesn't afford much protection from unscrupulous copycats, and for that reason probably not worth the effort. When it comes to the world stage, however, nothing short of an army of lawyers conversant in international law and on call 24/7 can offer complete peace of mind. The DIAB-Hinge team are well connected in that respect and already had much of the development work necessary to complete an application when the time came.

Nothing gets made in the Blades workshop without a drawing being produced before hand, whether it's a length of moulding or a complete wardrobe. It's a habit the partners formed with their very first projects more than 20 years ago and it's paid off hundreds of times since. 'When a lorry load of components arrives on site and the unpacking starts, it's very easy for something to go missing no matter how well organised you are. We number everything in a shipment and list the parts on our drawings so everyone can identify them and if need be reproduce them to the exact spec without too much trouble,' explained Shane. 'Also if a fitter is struggling to assemble something we can talk them through the installation using our CAD files back in the office.'

In the drafting office, Clive Gigney worked with Shane on the DIAB-Hinge to develop the mechanism. Having detailed drawings from the outset made it relatively easy to downscale the original size of the hinge and extend the range. Clocking up hundreds of hours at the beginning of the project comes at a cost but has been time well spent.

For more information about DIAB-Hinge or to get in touch with Blades Joinery visit www.bladesjoinery.com or follow them on instagram @bladesjoinery or @diabhinge.

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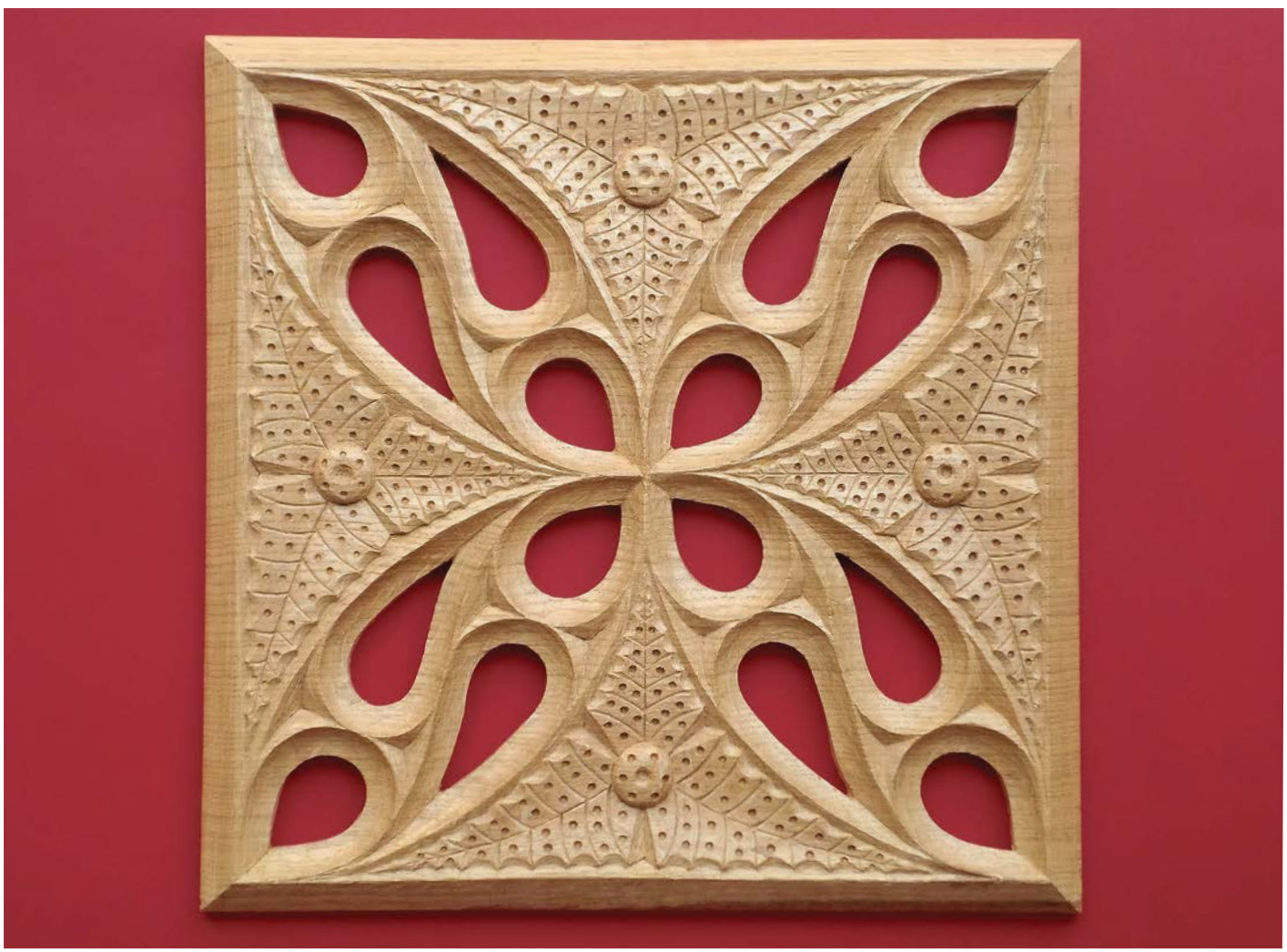
Authentic medieval Gothic openwork panel



Steve Bisco shows you how to carve this openwork panel in oak

This attractive pierced tracery panel is a fairly straightforward project, which relies for its effect on neatness and accuracy rather than technical complexity. It is a thin, flat oak (*Quercus robur*) panel measuring 305mm square × 18mm thick, which, after cutting out the voids of the 'openwork', allows you to get straight into the detail carving.

This Gothic design from the late Middle Ages comes from a door panel illustrated in the *Manual of Traditional Woodcarving* – first published in 1911 and still available from Dover Publications – which is described as 'a fragment of a buffet door in oak, carved partly in openwork'. It is said to be English and to date from around 1500 when Henry VII was king, which puts it in the transition from late-medieval to Tudor Gothic.

If we look at the geometry of the panel, the 'pierced' or 'openwork' parts are formed by four intersecting semi-circles centred on the halfway point of each side of the square, passing from corner to corner through the centre of the panel. The resulting almond shape from each corner to the centre is called a mandala. The curvilinear tracery in the mandala features the 'tadpole' or 'ghostie' shaped voids, which are known as mouchettes. Normally a mouchette would have cusps – pointed projections near the widest end to divide a round foil from the rest of the void – but our late-medieval carver decided to leave these out, possibly as a touch of Tudor modernity or perhaps because they would overcrowd the small space.

The triangular space between each mandala and the sides of the square is called a spandrel. Each spandrel is filled with a stylised spiky leaf, carved in a form of incised low relief – similar to chip carving. This is where you need to be really neat to get the best effect.

You have the option to darken the oak to a 500-year-old dark brown by 'fuming' with ammonia – see sidebar – but I decided to leave this panel in its new oak colour. The shadow lines in the shallow carving show up better on a light background, and this is how our medieval carver saw it and intended it to look.

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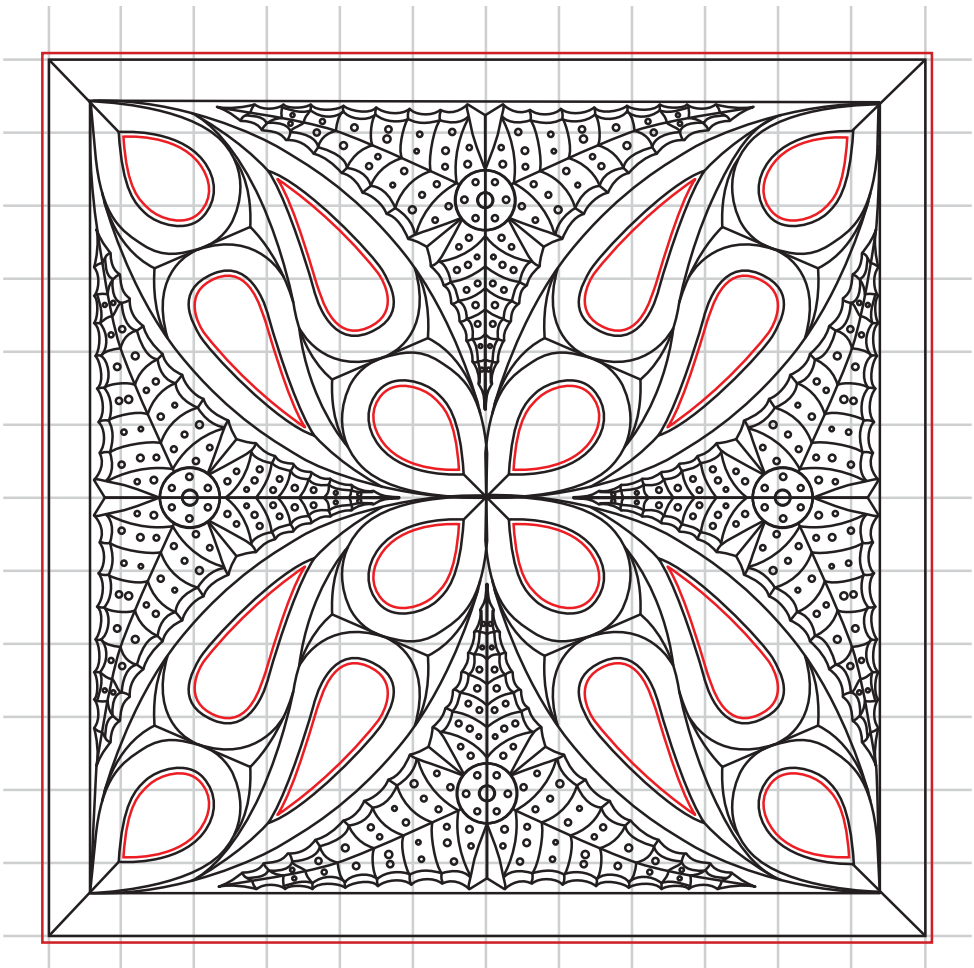

Things you will need...

Tools:
20mm, No.3 fishtail gouge
10mm, No.3 fishtail gouge
10mm, No.3 gouge
7mm, No.5 gouge
3mm, No.9 gouge
16mm, No.9 curved gouge
V-tool
10mm skew chisel
6.5mm flat chisel
2mm veiner

Wood:
Oak (*Quercus robur*) measuring 305mm square × 18mm thick

Using the pattern

This is a square pattern, which can be made any size big enough to work with, but I have made it for a 305mm square panel. The easiest way to make a full-size copy is to transfer the pattern into a computer using either a scanner or a digital camera. Crop the drawing in half down the centre and crop off part of the top and bottom border. Print it out on a full A4 sheet so the pattern area, excluding the border, is 279mm top to bottom. This will fit the 305mm square panel. The pattern is symmetrical so you can use one half twice.


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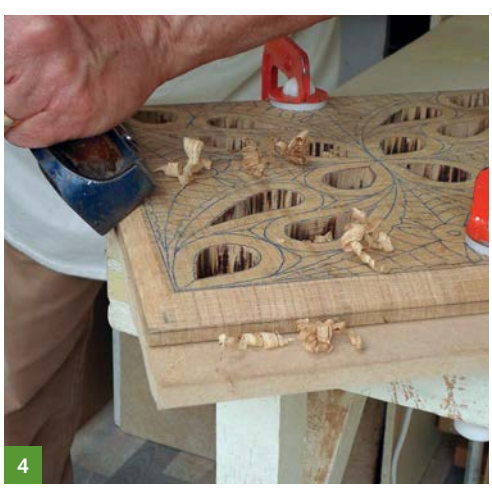
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1 Take your piece of oak and make a full-size copy of the drawing. 'Green' oak is easier to carve than fully dried oak but the thin panel may warp as it dries, so aim for a piece that has been air-dried for about three years.

2 Trace the pattern onto the wood with carbon paper. It is a complex pattern and you will miss some bits, so keep the drawing taped at one edge while you check and re-fix it to fill in the missing bits.

3 Mark the cutting lines in red and carefully cut out the voids of the tracery. Use a 4mm jigsaw blade to turn round the tight curves – keep it moving as much as possible.

4 Mark a line around the edges of the panel 13mm below the top edge and plane a 45° chamfer from this line to the edge of the pattern. On the end grain sides, plane inwards from each end so you don't break out the corner.

Optional fuming

If you want to darken this carving to an ancient dark brown, you can 'fume' it with ammonia. This replicates the natural ageing process of oak at a rate of about a century an hour. To do this, make up an airtight 'tent' or use a plastic tub and place the carving in it, raised on supports, such as nails. Put in about 50–80ml of household ammonia in a shallow dish – wear goggles to protect your eyes – and seal the tent or tub. Leave until the oak darkens to a pleasing dark brown, about 6–12 hours depending on the temperature, the concentration of ammonia and the amount of tannin in the oak.

5 To hold the work for carving, fix strips of wood to the bench around the edges of the panel.

Carving the tracery

6 Starting with one of the small mouchettes in the outer corners, use a 16mm, No.9 curved gouge or similar to carve a cove around the inside of it up to the pattern line. The cove should be as deep as it is wide and the bottom edges of all the coves should be at the same level. Take care to carve 'downstream' with the grain.

7 Where the grain changes direction in the curves, carve downwards across the grain with a shallow gouge to get a clean cut.

8 Shape the coves into a neat mitre in the corner, using a shallow gouge such as a 10mm, No.3.

9 Move on to one of the bigger mouchettes and carve the cove as before. Where the two mouchettes meet, take great care to make them touch with a neat sharp ridge.

Top tips

1. The key to neat carving is to approach every cut from the right direction. I use a sturdy freestanding bench 530mm square, which I can walk around so I don't have to keep moving the work.


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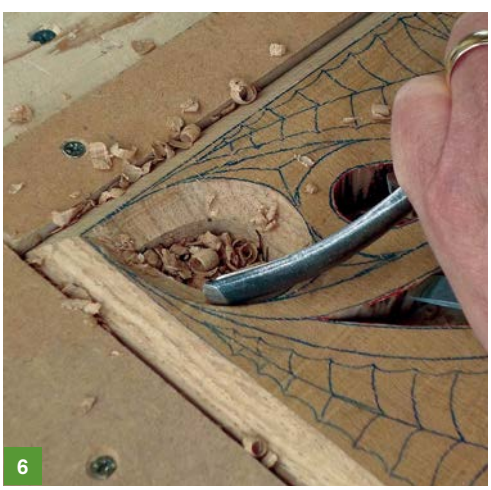
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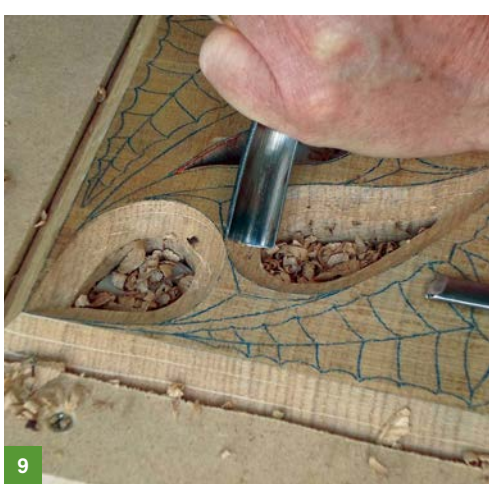
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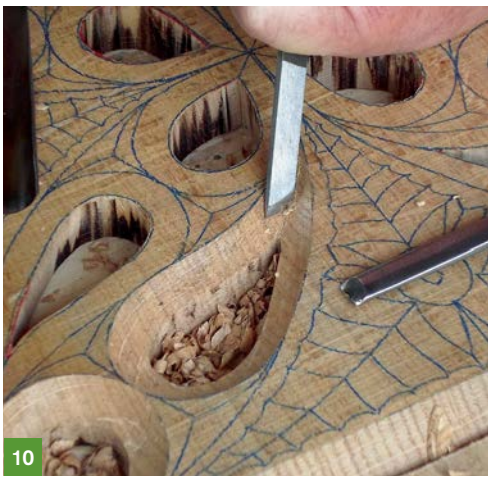
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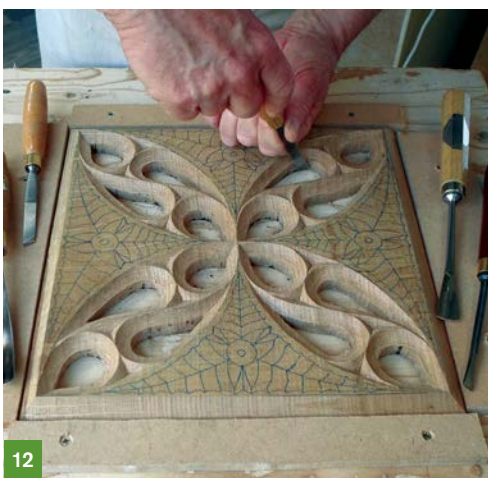
10 The larger mouchettes have a long thin tail and a slight ogee (backward) curve on one side. Using a skew chisel here will allow you to make a sharp mitre where the coves meet in the tail.

11 Complete the neighbouring mouchettes and carve the 'eyes' in the triangles between the curves. Eyes are a key feature of tracery and need to be neat. Cut an incised 'V' in the eye with the sides following the curve of each adjoining mouchette, with sharp mitres where the sides meet. Remove the carbon paper pattern lines by slicing very carefully and finely along each ridge.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12 Repeat the whole process to complete the tracery in all four of the openwork sections. Tidy up the vertical edges inside the openwork to remove all scorch marks and make sure the voids are perfectly shaped.

'Tidy up the vertical edges inside the openwork to remove all scorch marks'


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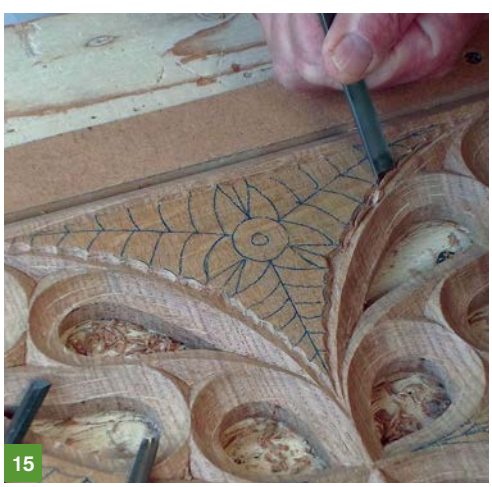
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13 You can now turn the carving over and put a small chamfer around the bottom edge of each void to give it a neater appearance from the front.

Carving the spandrels

14 Start the spandrels by carefully carving a chamfer along the ridges beside the mandalas and the edges of the panel. Slope this into the leaf. The ridge on the end-grain side of the panel is liable to crumble, so use a slicing cut from a skew chisel to avoid this.


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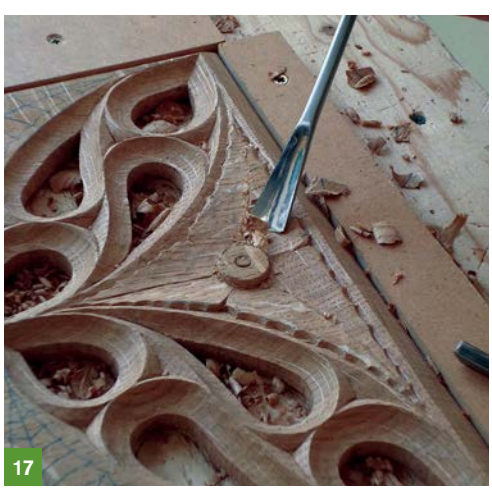
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15 Cut the scallops around the edges of the leaf and shape the chamfer into them.

16 Isolate the roundel in the middle of the leaf by cutting a groove round it, then cut a 'V' along each main vein line, starting shallow at the corners and getting deeper towards the middle.

17 Use a broad shallow gouge to carve a smooth hollow in the leaf down to a depth of about 4mm in the middle.

18 Re-cut the main vein lines with a skew chisel; this will allow you to achieve a clean edge. Round over the roundel and put a hollow in the middle of it. Use the skew chisel again to cut the deep 'V' midway in each side of the leaf.

19 You can now begin to cut fine secondary veins all along the leaf by making 'chip' cuts with a gouge of the right size and profile – preferably a No.3, 20mm.

20 Tidy up the scallops at the edges with a sloping cut into the chamfer. Finish the leaf with rows of tiny holes made with a 2mm veiner – push it in vertically and rotate it.

21 Repeat the process with the rest of the spandrels. Check the carving with the light at different angles and tidy up any rough bits, which will ensure that you get a good sharp glossy finish straight from the tools. Don't use abrasives on oak as it kills the finish.

Finishing

22 Polish the oak to a soft satin sheen with a good wax polish. Use a stiff brush to work the wax into the crevices, then buff it up several times with a dry cloth.

23 Hang it in a place where the light strikes it sideways to show up the shallow details on the leaves. The completed Gothic panel should look something like this. F&C


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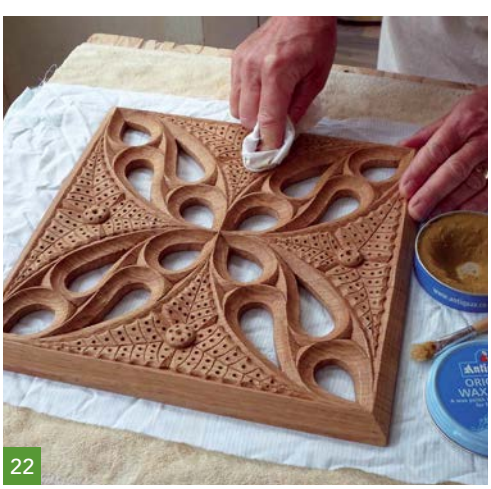
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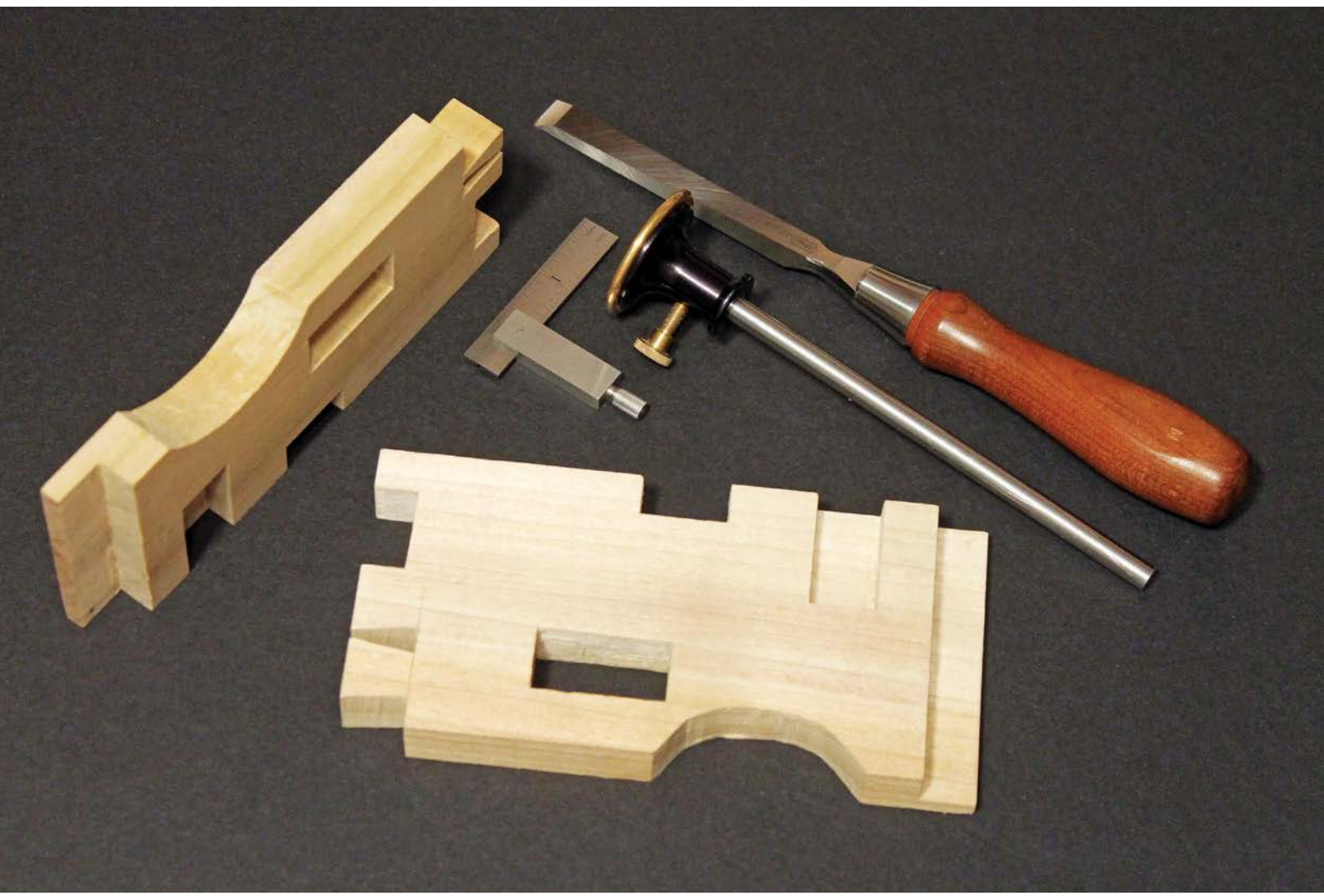
Top tips

2. When cutting out tight curves with a jigsaw, it is best to use a 4mm blade. You'll find that it will get very hot, so keep it moving to reduce the amount of scorching on the wood.
3. Avoid using abrasives on oak; they give it a dull opaque finish and blur the detail. A good tooled finish will give you a naturally shiny surface and crisp edges that will look more lively. Practise working the carving to its final finish by making slicing cuts with sharp tools of the right size and profile.
4. Use a skew chisel for making clean cuts across short grain. Its angled cutting edge slices through the wood fibres instead of pushing against them and tearing them out.

The modified Gottshall joinery exercise



Charles Mak teaches a class on chisel skills, using the Gottshall exercise. You can learn the basics of his boot camp here, too, without leaving home

Never heard of the 'Gottshall Block Test'? It is an exercise for beginning woodworkers included in *Making Antique Furniture Reproductions* by Franklin H. Gottshall, a period furniture writer. The key value of this exercise lies in understanding that grain directions play a critical role in how you use a chisel. Your goal is to keep the chisel edge from digging in and splitting the wood.

After teaching classes modelled after Gottshall's exercise to woodworkers who are not beginners, I can safely say that the Gottshall exercise is a worthy pursuit for the average traditional woodworkers as well.

PHOTOGRAPHS BY CHARLES MAK

The modified exercise and the tools

When I teach, I follow a slightly different approach from Gottshall's as our focus is on the chisel. First, I replace the round and mitre corners with a tail (see diagram opposite). Second, the only cutting tools we use are the handsaw and chisels, no drill or coping saw. Lastly, the handsaw is used only on the tail and the curved cut-out.

We scribe all lines across the grain with a square and marking knife, and all lines along the grain with a marking gauge. You can use a bevel gauge to mark out the tail, or simply do it by eye while a compass is used to draw the arc. Find yourself a small square that will allow you to check squareness even in tight places. The only other thing you will need is a free morning or afternoon in the shop.

References

Mak, Charles. 'Using a bench chisel'. Lee Valley Tools Newsletter. Volume 8, Issue 3. January 2014. As retrieved from: www.leevalley.com/en/newsletters/Woodworking/8/3/Article1.htm.

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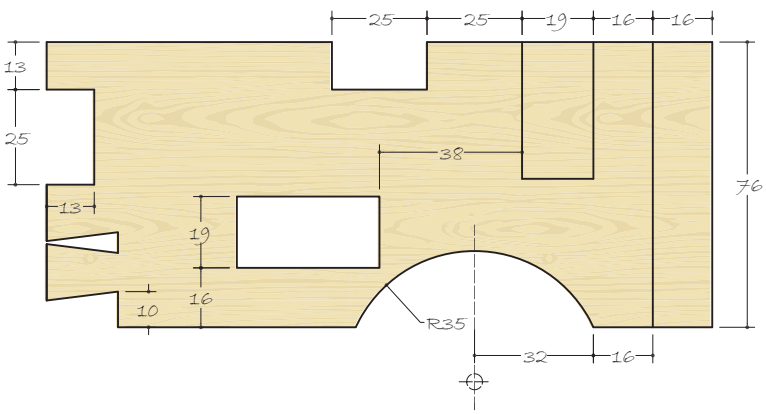
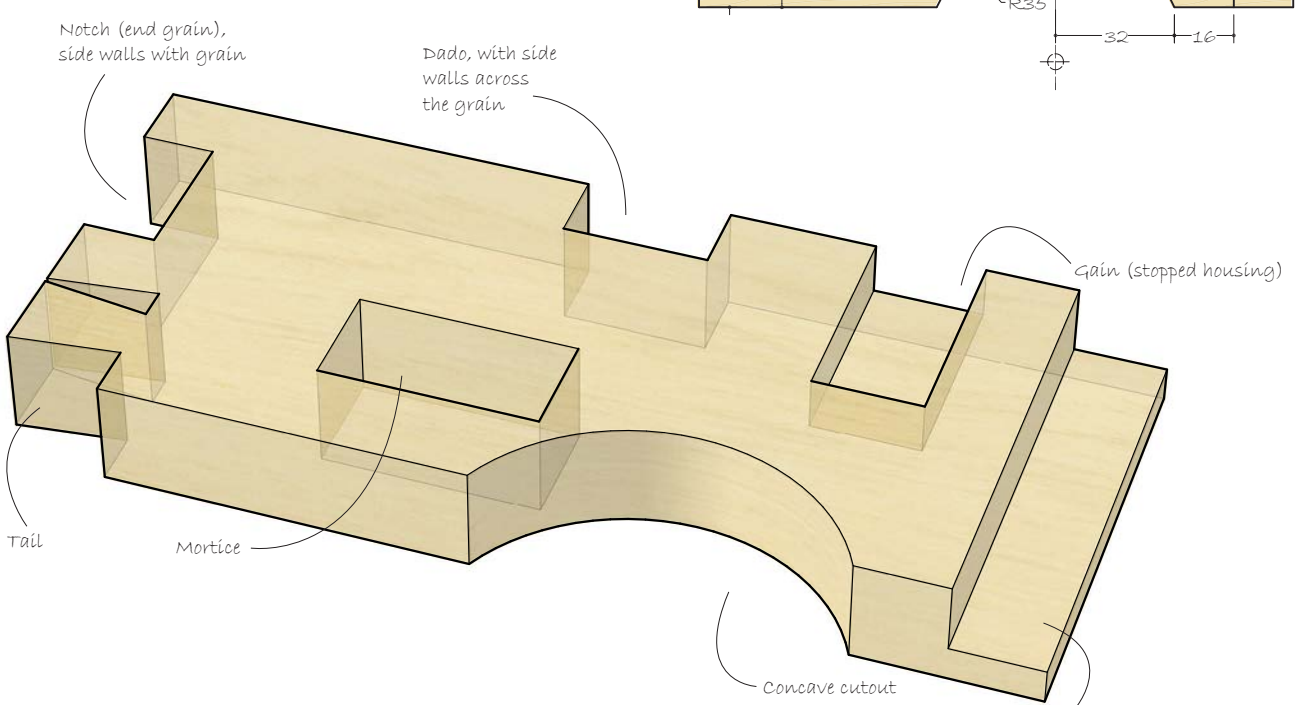
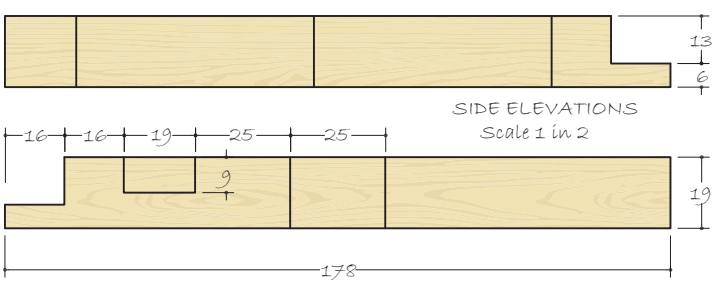
A keen edge gives you superior control and hence better results

EXERCISE BLOCK 3D SEMI- TRANSPARENT TO SHOW CUT DEPTHS

PLAN
Scale 1 in 2







SIDE ELEVATIONS
Scale 1 in 2

The rebate (or fillister)

We lay out one joint at a time, or, if you followed Gottshall, you would lay out all the joints in one go. Let's start with the rebate.

The challenge in this joint is to chisel a flat cheek that is square to the shoulder, a task that is usually finished with the aid of a router plane or shoulder plane. Here, you will do all that with a single chisel!

First, scribe the rebate to width and depth across the block. Unlike Gottshall, we do not use a saw for this joint. Start with vertical chopping about 1.5mm from the scribed line and then angle the chisel to chop away the waste. Repeat the vertical and slanted cuts to remove about half the waste from the baseline. Then, only if the grain allows, chisel in from the end grain to remove the bulk waste.

When you get closer to the baseline, switch gear and pare cross grain from both edges to level the cheek. Finish the job by paring down on the shoulder line perpendicularly.

Throughout this whole exercise, we chop vertically with the chisel's bevel facing down and towards the waste, while we pare horizontally with the bevel up, also towards the waste.

Using a trick attributed to woodworker Chris Schwarz, I set the marking gauge by placing its cutter into the engraved line on a ruler

You may also scribe a second line on the waste side from the shoulder line to guide your initial chopping

Watch the grain when paring at the end to avoid removing wood beyond the baseline

Trim the depth of a rebate freehand, or use a block that matches the rebate lip as a guide

The gain (or stopped housing)

To prevent lifting up the fibre, cut the knife walls across the grain first

Remove the waste from both sides towards the centre with alternating vertical and angled cuts

Pare down on the scribed line to remove the last bit of waste

The gain involves both cross-grain and along-the-grain cuts. Chiselling down along the grain runs the risk of splitting the wood. The trick is, therefore, to make cross-grain cuts first, so they act as a stop to prevent any splitting along the grain.

Lay out the gain and define its perimeter with what British teacher Paul Sellers calls the knife walls. The edge of the knife wall is where to start the cross-grain chopping, away from the scribed line. Work from both sides towards the middle with vertical and slanted chopping until a hill is formed. Then pare away the middle waste and level the bottom, taking care not to go below the baseline.

Lastly, chop or pare on the scribed lines, first across and then with the grain to complete the stopped housing.

The dado (edge-grain notch)

Gottshall called a notch on the edge a dado. The challenge here lies in cutting it perfectly aligned on both faces. You must mark out the joint perfectly identical on both faces and work in from both faces, eliminating any chance of blow-out.

Unlike Gottshall, we do not use the saw here. After cutting the knife walls on both faces, use vertical and angled cross-grain cuts to remove about half of the waste down on one face. Then flip the block and repeat the same kind of cut to break through the waste. Finally, working from both faces, pare the cross-grain side walls clean and then the end wall.

Work on the two cross-grain walls first, chopping from both faces

The end-grain notch

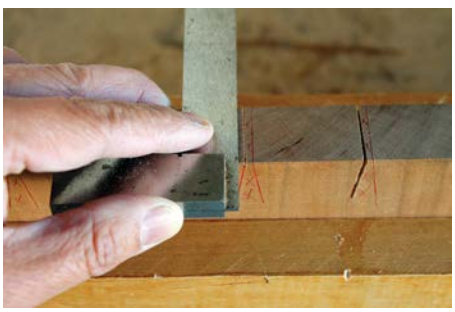
While a dado has side walls going across the grain, the end-grain notch's side walls go with the grain. This means after chiselling the knife walls, we make our vertical and slanted cuts on the end wall first, from both faces. As with the rebate, we also chisel in from the end grain to remove some of the waste. In the last steps, flip the block and remove the other half of the waste, followed by the final paring of the end wall and then the two side walls.

Always be watchful of the grain direction when working from the end

The tail

The challenges of a dovetail joint are well documented. My primary advice to a beginner has always been to start a saw cut with the workpiece held plumb. My second bit of advice – one that should prevent many unnecessary spoiled cuts – is to check that the initial kerf on the end grain is square to the face before charging ahead. After sawing the tail, clean up the shoulders with a sharp chisel from both faces.

Hold a workpiece level in the vice before starting the saw cuts



It is never too late to correct a faulty start if you check the first saw kerf for squareness

Eliminate the risk of splitting by doing the cuts across the grain first

The mortise

By now, you will have already tried the various techniques that will be needed to cut a mortise. A mortise has four walls, two (end walls) going across the grain and two (side walls) with the grain. Again, you'll work from both faces and cut the mortise walls going across the grain first.

Gottshall drilled out the waste before he started. If your plan is to use a mortise chisel and not a bench chisel, avoid boring, because as Derek Jones points out (*F&C* 244, 'A place for nearly everything'), a square chisel in a round hole doesn't work well.

After incising the knife walls, cut out the end walls from both faces and then pare the side walls clean.

The concave cut-out

In the last operation, you use a chisel as a shaping tool. Lay out the arc on both faces with a compass. While Gottshall removed the bulk waste with a coping saw, we use a handsaw and chisel. Lastly, with steady pressure and movement, trim along the concave curve – from both directions with the grain.

Voilà! You've just expanded your woodworking repertoire with a set of time-honoured techniques that will serve you well in your next joinery challenge. *F&C*

Make a series of saw cuts about 3mm apart, down close to the pencil line

Orient your body so you can see that the chisel is perpendicular to the wood

For a concave surface, use the bevelled face of a slightly wider chisel to shape with the grain

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205 mm

800 W

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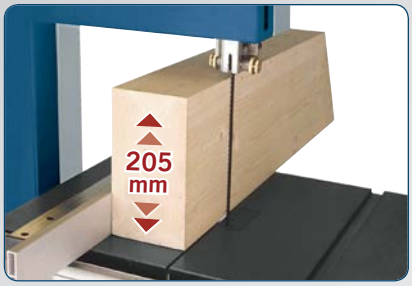

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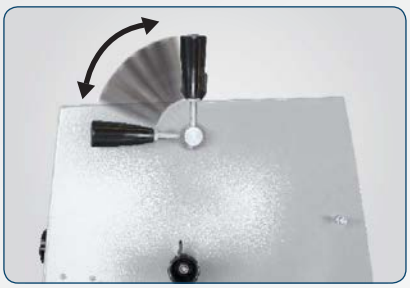

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Quangsheng Mitre Plane

Kieran Binnie puts the Chinese brand's newest plane to the test

PHOTOGRAPHS BY KIERAN BINNIE

Trimming boards square and to length on a shooting board

For a long time mitre planes were neglected by modern manufacturers, leaving prospective users scouring used tool lists for working examples. Fortunately this has changed over the past couple of years, with modern mitre planes now being offered by Lie-Nielsen and Veritas. The latest entrant to this niche end of the plane market is Chinese manufacturer Quangsheng, whose No.22 infilled mitre plane is now available in Europe through Workshop Heaven.

Quangsheng have made their reputation by reproducing tried-and-tested Western plane designs, leveraging bulk Chinese manufacturing to offer reliable tools at competitive prices. For instance, see the review of the Quangsheng No.43 plough plane in *F&C* issue 257. The No.22 represents a departure for Quangsheng, as rather than updating a historic design, the plane is an original design. I spent several weeks using the Quangsheng No.22 on a large furniture commission to find out exactly how well this new design fared in use.

On the bench

At 285mm long by 50mm wide and weighing 1.7kg, the No.22 is a substantial plane. The 3mm-thick iron is 40mm wide, and made of T10 carbon steel. The No.22 is unique amongst large-scale modern mitre planes in that it is an infill plane – normally the preserve of boutique plane makers. The example I used had a cocobolo (*Dalbergia retusa*) infill, although with that timber now on the CITES II list, Workshop Heaven tell me that alternative species will be used once their current stock has been exhausted.

In the spirit of taking a new approach to the design of mitre planes, there is some unusual engineering in the No.22. Firstly, while most mitre planes adopt a bevel-up blade orientation to achieve the low angle necessary for trimming end grain, the No.22 seats the blade bevel down at an angle of 38°. Placing the iron bevel down means that the No.22 achieves an effective cutting angle comparable to more traditional bevel-up designs, and is certainly low enough for planing end grain. Secondly, although the aperture of the mouth is fixed, the frog can be moved by slackening two screws, and then sliding on its bed to close or open the mouth as desired. The intention is to improve the thickness of the sole of the plane behind the mouth, which Quangsheng consider to have been a point of weakness on vintage planes.

The cap iron is a substantial block of solid bronze and cinches the iron down tight to minimise chatter and maintain a smooth cut. The depth of cut is set by a Norris-style adjuster in front of the rear infill. As befits a plane designed for trimming end grain on a shooting board, the sides of the plane are at 90° to the sole, and the high curve of the side around the frog provides a generous surface to ride on a shooting board.

The Quangsheng Luban No.22 Bronze Infill Mitre Plane is available from Workshop Heaven priced at £185.
www.workshopheaven.com

The No.22 takes fine end grain shavings, leaving a clean surface

Smoothing oak boards

In the hand

When you unwrap the No.22 from its packaging, the first thing you notice is the weight of the plane. Next is likely to be the fact that it does not really look like anything else on the market.

For a factory-based manufacturer, attempting an infilled plane is an ambitious move, and both infills were nicely fitted to the body. I am told that Quangsheng took the conscious design decision to fit each infill to just one side of the plane, allowing a small expansion gap on the other side to accommodate seasonal wood movement. The fit is not as seamless as you would find on an infill by a boutique maker, but it is tidy, and at this price point it would be unrealistic to ask for the fit and finish of a plane by the likes of Karl Holtey or Oliver Sparks. Both infills are well finished, although I found that the rear infill had too many sharp edges and hard transitions to be truly comfortable in the hand. In contrast the front infill is nicely curved and provides plenty of support and comfort. Unfortunately the example I was sent had a small defect on the sole, consistent with those obtaianed after a fall or possibly sustained during the manufacturing process itself. This was nothing that a few minutes with a file couldn't ease out, but it is not work you expect to need to do on a tool costing nearly £200. Incidentally Workshop Heaven, who kindly supplied this item, offer a lifetime waranty if a tool doesn't perform as advertised or fails through faulty workmanship or materials. They will replace, repair or refund under such circumstances which is good to know. It's also reasuring to learn that samples for review are supplied at random and not cherry picked from a pile. The first task I set to was shooting some 12mm-thick oak (*Quercus robur*) boards square. After a brief moment honing the blade, the No.22 was on the shooting board and removing end grain shavings easily. The plane performed perfectly in this function – the extra weight keeps the plane in the cut and ploughs through tough end grain while leaving a clean surface behind. The substantial cap iron and frog clamp the blade firmly and I experienced no chatter even when taking a heavy cut through some particularly ornery oak.

What is more, the plane is very easy to set up and get cutting perfectly square, while the generous sidewalls and well distributed weight kept the plane from tilting on the shooting board. The front infill is very comfortable, encouraging your fingers to curl round the indentation and push the plane through the cut. For users who find the rear-mounted totes of Veritas and Lie-Nielsen shooting board planes to be counterintuitive, pushing the No.22 by the front infill offers a more familiar experience, and I certainly had no qualms using it on the shooting board in place of my usual plane.

Mitre planes are not just for shooting end grain, and so I decided to move the frog closer to the mouth and see how it would perform as a large smoother. The plane itself performed well smoothing oak boards, taking fine shavings and leaving a good surface behind. However, the combination of a heavy body and awkward rear infill means that it is not really suited to this work – there is simply nothing comfortable to hold and lift the plane by at the end of the stroke, and gripping that rear infill rapidly introduced hand fatigue. Trimming some overlong tongue-and-groove boards to length once they had been fitted to a carcase on the other hand was a positive experience, and for shorter planing sessions the No.22 was comfortable enough.

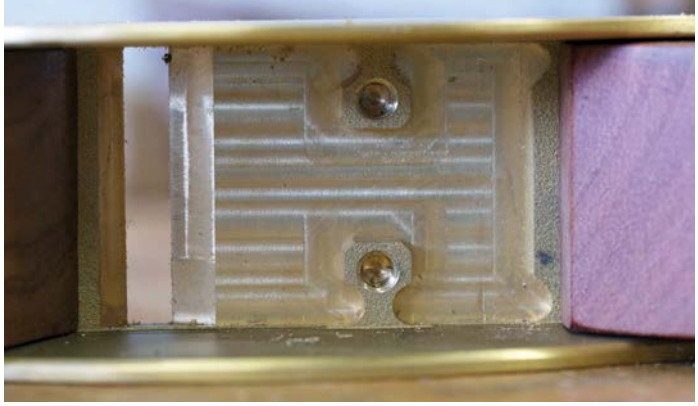
The rear infill creates an awkward grip when using the plane upright. The front bun is much more comfortable in this position

The review sample wasn't without it's flaws

The cap iron is a substantial block of bronze which works well to minimise chatter

The front infill is nicely fitted, and curved to support the hand

The frog is also very solidly made, supporting the blade even in heavy cuts



The bed of the plane is machined flat, and features two screws to allow adjustment of the frog forward and back

Together the thick cap iron and frog clamp the iron tight and prevent chatter

In the tool chest?

When I first picked up the No.22 I couldn't quite decide what function, or place in the market, it was designed for. Once it was in use, however, I quickly appreciated it as a good quality shooting board plane that could bring boards down to length, and square, in short order. It is not a fussy plane to set up either, which means there is little excuse not to be shooting perfectly square ends.

This is not a plane I would want to use in place of a regular jack or smoothing plane, as the rear tote is extremely uncomfortable and offers very little purchase when lifting the plane, particularly given the significant weight of the body. Using the plane upright for brief sessions is manageable, but longer sessions are a recipe for fatigued and strained hands.

Although spending the best part of £200 on a single-purpose plane might seem extravagant, it is still cheaper than dedicated shooting board planes by other manufacturers, and for some woodworkers the relatively keen price and different approach will really appeal.

The No.22 continues to cement Quangsheng's reputation for producing good quality, affordable tools, and is the product of some clever design, particularly the bevel-down design, adjustable frog and the allowance for seasonal movement of the infills. The casting defect on the review sample does go to show that Quangsheng have some more work to do on quality control. Even though it was a small and easily remedied defect, it is a shame that an otherwise solid tool can be marred by quality-control issues. F&C

Both infills are fitted to just one side of the plane body, with a small expansion gap on the other side

The rear infill is plagued with sharp corners and hard transitions, which make it uncomfortable when using the plane in an upright position

Trimming the end grain of backboards on a large carcase

Kit & tools

Having trouble sourcing the right tool for the job? Here's a selection of new and essential equipment for the workshop

All sterling prices include VAT, correct at time of going to press

When it comes to disassembly and sharpening, a leather mat is so much better than a flimsy piece of perforated rubber

PHOTOGRAPHS BY DEREK JONES/GMC PUBLICATIONS

MINI TEST
Bench hygiene tips

I've decided to go with something other than my usual tool test this month in favour of a few simple 'shop tips. I've got about half a dozen sheets of 6mm ply tucked down the side of my bench that come out for various activities that would otherwise mess up my bench top – sharpening, finishing, sanding and knife cutting for example. While there was a time when I wouldn't stress too much over the odd scratch or unintentional pilot hole I've since grown to appreciate the benefits of maintaining a clean, flat work surface. Beyond a need to take reasonably clean photographs using the bench as a backdrop, there are plenty of other reasons for exercising good bench hygiene. If yours is set out like most workbenches, you'll probably carry out 90% of your work at the same sweet spot on one side of the bench. That might be flattening boards, sawing with a bench hook, marking out, assembly and glue-ups, all of which go a lot smoother and are a lot more accurate when done on a clean, flat surface. Spillages on their own aren't usually a disaster but onto a surface pitted with cuts and abrasions they tend to swell the timber and distort the surface, so prevention is better than cure.

Tip number two is along the same lines but works in reverse in that it protects components from coming into contact with the bench. A removal blanket or similar sheet works wonders but they tend to be big and take on a lot of dust if you're not careful. A great alternative is to invest in a piece of hide such as nubuck. Lay it suede-side down on the bench and it offers a level of non-slip protection to delicate parts for a multitude of activities. When the grip starts to wear, bring it back to life with a wire brush. An advantage is that both sides can be vacuumed without the risk of disappearing up the hosepipe and the smooth side can be waxed to keep it cleaner for longer. I bought a couple of full hides from Leather4Craft. You can expect to pay around £30 for a 2mm-thick hide if you're not fussy about the colour. I guarantee you'll find other uses for it around the workshop as well.

Finally, I don't know how I survived before without having the Festool Cleantec CTL SYS (£307) tucked under my bench. Almost every activity ends with me reaching for the green hose to hoover up dust and debris making the environment that much more pleasurable to be in, not to mention healthier. And I'd highly recommend the Longlife filter bag, even at £57.

Leather hide from:
www.leather4craft.co.uk

Festool Cleantec CTL SYS and Longlife filter bag from: www.festool.co.uk

Lee Valley hex key handles

Designed for use with standard hex keys, these durable glass-filled nylon handles provide a secure, comfortable handhold. You can set a key perpendicular to the handle, providing a T- or pistol-grip for better torque, or in line with the handle like a screwdriver for faster turning. Keys fit into appropriately sized slots in the handle and are held in place by rare earth magnets. The set includes a small and a large handle to fit metric keys from 1–10mm. A worthwhile addition to any toolbox.

From: www.leevalley.com

Smart Ware

Andrew Crawford's smartHinge has been available since early 2011 and has been used successfully by thousands of box makers around the world, amateur and professional alike. Now working with an excellent new UK manufacturer, the matching smartLock is available and the smartWare range, in polished brass, stainless steel and gold plated, is finally complete. Andrew is launching the newly complete smartWare range at an open day at his Shropshire fine boxes workshop on 8 October, 2017. See you there!

From: smartboxmaker.com

Makita pencil impact and drill drivers

The latest versions of Makita's compact 7.2v pencil drill drivers and impact drivers have a host of enhanced features – more rpm, more tightening torque and enhanced controls. Weighing just over half a kilo they can be used in either pistol grip mode or as in-line long handle powered screwdrivers. The impact driver is particularly popular for light installation work, as shown here, but also for cabinet installations where access can tight. The new Makita TD022DSE 7.2v impact driver will deliver up to 3000 impacts per minute and drive home a M8 standard bolt or machine screw. The Makita DF012DSE drill driver has two speed ranges, and will drive a 5mm hole in steel and 6mm in timber.

From: www.makitauk.com

Note. The effects of a constantly evolving global market in raw materials and other resources mean that prices can change. Be patient with your supplier and please understand that the prices quoted here are correct at the time of going to press.

Tricks of the trade. . . . . .Holding curved parts

Ramon Valdez makes a useful workholding jig

Holding curved parts can sometimes be tricky, which is not really surprising given that most of our clamping devices are designed to hold flat or square components. The choice always seems to be to risk damaging the component with your clamp or risk not being able to work on it safely. So, here's a super quick way to make a jig using offcuts and scrap material. The jig provides support for the workpiece while leaving you with both hands free to line things up and make them secure.

I start with a thick billet of a timber such as poplar (*Liriodendron tulipifera*), which is cheap and in a lot of workshops generally available in large sections as offcuts. Any timber will do, of course. Then simply trace a curve (inner or outer will work) onto the block of wood. Cut the curve on the bandsaw. Note, with thicker material it will help considerably if your machine is nicely set up and cuts square to the table. When you're done you don't need to remove the saw marks as a perfect fit is not necessary and they increase gription.

Attach a single piece of 3 or 4mm thick ply (MDF or hardboard will work just as well) with staples and glue to the bottom of the curved pieces, I'll refer to these as cauls from now on and you'll see why. I used a scrap piece of Baltic birch as it allows for some flex. Remember to space your cauls according to the item you intend to hold. I also attached a couple of support cleats made of 6mm plywood to each of the cauls so the whole assembly can be cradled in the vice.

As you tighten the vice the jig flexes thanks to the thin ply beneath the cauls and holds your workpiece firmly. A useful tip when you are making shaped pieces is to save the offcuts as they will often provide the perfect caul for a clamping jig like this. F&C

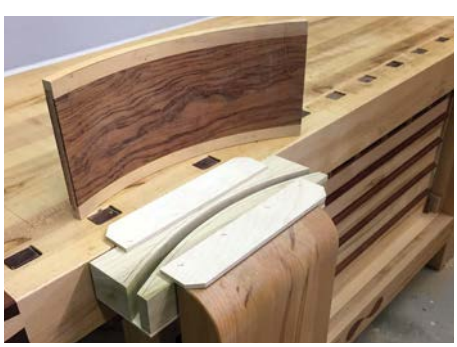
1. Select a suitable block to make the cauls

2. Trace the shape onto the block

3. Cut between the lines

4. Fix the cauls to a flexible base board

5. Attach some support wings



6. Drop the jig into the vice and you're ready to clamp

PHOTOGRAPHS BY RAMON VALDEZ

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Out & about:
Maison de l'Outil et de la Pensée Ouvrière

This month we head across the Channel to visit a remarkable museum celebrating tools and craftsmanship

PHOTOGRAPHS COURTESY OF MAISON DE L'OUTIL ET DE LA PENSÉE OUVRIERE

This museum dedicated to tools and trades is located in Troyes, France. It boasts a vast collection of hand tools (around 12,000) from the 17th, 18th and 19th centuries, showcased in 65 display cases. The contemporary power of the scenography adds to the story and strength of each tool, painstakingly brought back to life.

History

The Maison de l'Outil et de la Pensée Ouvrière (MOPO) was opened in 1974, its name translates roughly as 'The House of Tools and the Artisan's Philosophy'. The museum is housed in one of Troyes' most beautiful buildings, the Hôtel Mauroy. Destroyed by a fire in 1524, the building was rebuilt in 1556 by Jean Mauroy, a rich merchant of the city. He undertook important transformation works and turned it into a hospital and college for orphans in order to teach them a trade. The Hôtel Mauroy was renovated in 1969 by the city of Troyes and by the Compagnons du Devoir (journeymen) – it is an architectural jewel in Troyes' historical heritage, at the heart of a fully restored city centre, with which it shares many architectural specificities.

The museum's collection started with Paul Feller, a priest born in 1913, who collected books and tools from every corner of the country. He wanted apprentices learning a trade to become interested in the history of trades and raise their working knowledge. He was also very attracted by the link between someone who knows, and someone who wants to know: for him, every teenager should become an apprentice and learn a trade to become a man – no matter what job he should practice in the future. At the end of his life, Feller left his collection to the Compagnons du Devoir in order to create a public museum – the Compagnons continue to collect outstanding tools and they still manage the museum today.

Display of axes

Tools belonging to the cooper's trade

What to see

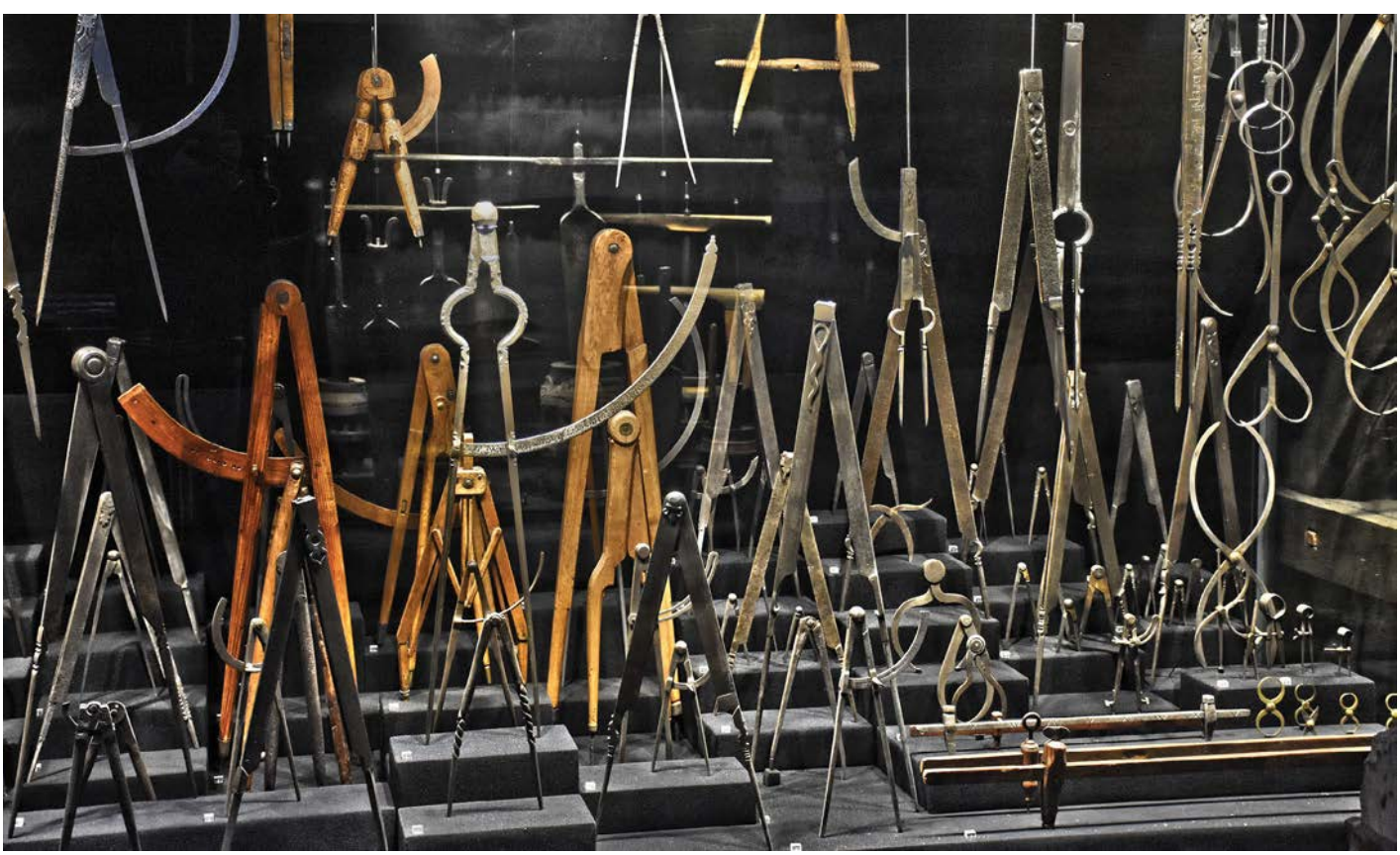
MOPO houses probably the biggest collection of European handmade tools in the world. Some of the permanent displays are of generic tools (files, hammers, axes, vices, etc.) but the other exhibits are gathered by profession in four areas: woodworking, metalworking, leatherworking and stoneworking. All the tools were particularly chosen because of their story, their marks (maker's, romantic, religious, political marks, etc.), their ingenuity or their distinctive features.

There is no doubt that inestimable treasures are concealed, waiting to be interpreted by any visitor keen to understand its message. But in this museum, we discover that a tool is more than a beautiful object: it carries a man's life-story, a story of craftsmanship and culture. It's essential for every visitor to reflect on the man or woman who invented, made or used the tool before thinking about the tool's purpose.

By showing this wonderful collection, the museum highlights craftsmen and craftswomen, showcases their knowledge, expertise and life skills: every action they make, every gesture, every work is the result of an intellectual deed and a rich sensitivity.

Where else to see … tool museums

- **Sindelar Tool Museum**
  Travelling museum, USA
  www.sindelartoolmuseum.com
- **Takenaka Carpentry Tools Museum**
  Kobe, Japan
  www.dougukan.jp
- **Tool Industry Collection, Kelham Island Museum**
  Sheffield, UK
  www.simt.co.uk/kelham-island-museum



Some tools are displayed by generic type such as dividers (above), hammers and planes (shown overleaf)

Tools are also displayed by trade. The tools shown above right and left belong to the joinery profession

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An airbrush with the past

Derek Jones delves into the *F&C* archives for this Gillows-style table

ILLUSTRATION BY IAN HALL/GORDON FRY/GMC PUBLICATIONS

In the same way that it's almost impossible to completely hide the accent of your mother tongue, furniture makers that come to the craft from a previous career often have a style that links the two. Ian Lyons built his version of a Gillows ladies dressing table which appeared in March 2001, *F&C* issue 50. After 35 years as an engineer, Ian took early retirement and enrolled as a mature student on the BTEC Furniture Making & Restoration course at Leeds College of Art & Design.

Part of Ian's brief was to retain the neo-classical proportions of a Regency piece while adding more storage to what would historically have been a single tier of drawers. In the original article Ian promotes the use of CAD drawing as a design tool; something he quotes as learning at college and not as a result of 35 years in engineering.

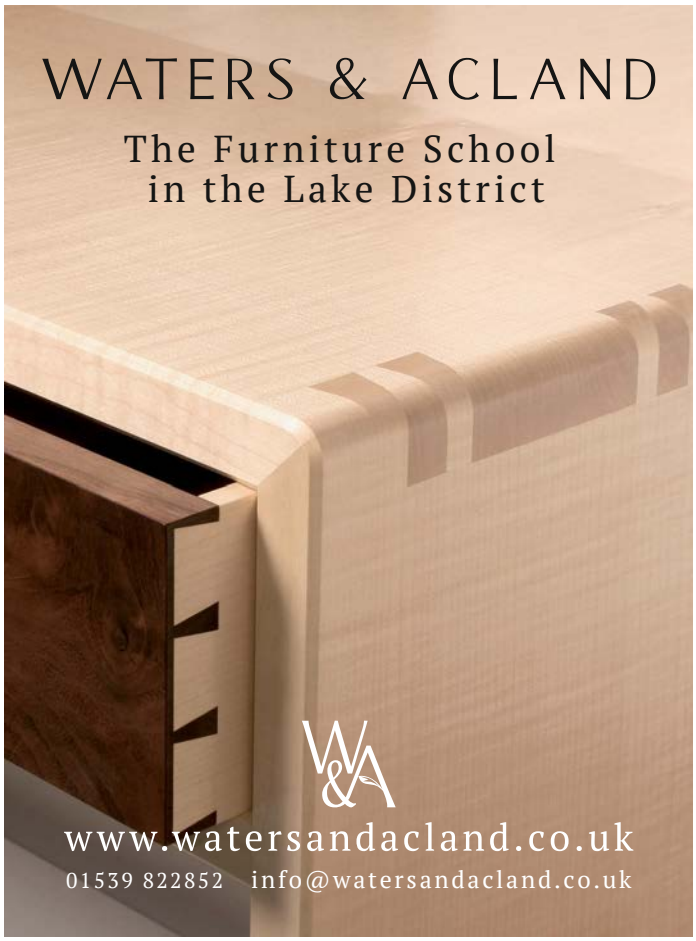
He admits to returning to his 'engineering roots' to solve a lot of the problems associated with the construction of the legs. The show surfaces of the carcass and legs are made from solid cherry (*Prunus avium*), the most figured boards being reserved for the drawer fronts with the break line between the drawers veneered with zebrano (*Microberlinia brazzavillensis*) – a detail that extends to the back of the piece. The internal parts that Ian refers to as a sub-frame in his text are made from tulipwood (*Liriodendron tulipifera*), something that he later wishes he hadn't done; 'In retrospect, the drawer sides should have been made from oak as I have had problems since with the drawers sticking due, I believe, to tulipwood being particularly susceptible to climatic change'.

There's a lot of traditional joinery used to construct the top drawer section, something that no doubt appealed to Ian rather than Dominoes or biscuits. Biscuits were used, however, for location on some parts of the internal sub-frame. In his text Ian talks a lot about his process for identifying the position and location of parts relevant to one another, which signals him out as an experienced maker. Something that's not depicted in the illustration is the cocked beading on the drawers and the triple reed detail applied to the edge of the worktop with a 'shop-made scratch stock.

I particularly like the illustrator's treatment of the metalwork giving the nuts a Colgate sparkle effect, a graphic device he also uses to identify the brass sleeve at the top of the lower section of the cut-away leg. Despite some of the artistic inaccuracies of the artwork, a drawing with this much detail would clearly demonstrate to a would-be client just how complicated a simple piece of furniture can be on the inside. F&C

Next month

Next month we'll be going back to April 2000 and issue 39 to examine Andrew Moore's blanket box.



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Gimson style cabinet on stand

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Construction tech
Piston-fit drawers for internal spaces

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