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welcome

Opportunities to learn are ever present in our lives (or at least always round the corner of semi-ignorance). It's still both surprise and validation when unexpected information drops into the in-tray and immediately opens up a route into a new uncharted territory. Reading the review of Axminster's new drill stand the other day – which will also take a Trend T4 router – is a good example (it's on page 75, by the way).

Thinking overhead

It's long been a dream of mine to own (or at least to have unfettered access to) an overhead router. Anyone who has used one of these machines (most likely in a professional workshop situation) will know just what a great machine it is. For anyone else, just think: difficult and repeat routing made five times easier.

Now, I don't by any stretch of the imagination think that a drill stand will offer everything that an overhead router can achieve, but I'm sure that there will be many advantages to be gleaned, most of which are currently undiscovered. A new opportunity appends itself to the list...

World wide wood

Although I know, as well as anyone, that you can't please all the people all of the time, it doesn't stop me from always trying. To that end, I'm currently exploring an opportunity to run the occasional project from America in our pages. One of the best magazines there is *Popular Woodworking*, and if all goes well it should provide an interesting take on our craft.

In my limited experience of woodworking in the States, the only real differences are their timber species (although many of these will be familiar to UK woodworkers), some of their terminology (think of two countries divided by a common tongue), and of course, their preference for the imperial measurement system.

Best feet forward

This last point is likely to be a double-edged sword, as for most of us (and I'm definitely including myself here) the imperial system remains a quaint but still useful method of communicating rough dimensions. For others, I suspect the intermittent inclusion of feet and inches in the magazine will bring a warm glow of pleasure to the metricated heart! Variety is a very good thing, of course; as they say in France "*La variété, c'est la vie, l'uniformité, c'est la mort.*"

It's (still) good to talk

I'd like to take this opportunity to thank everyone who has taken the time to drop me a line on the email system; if things go on like this I shall have to employ another secretary (ha! only joking, one would be good!). I realised this week that I've not sent out too many *Woodworker* badges of late. This is mainly due to the lack of postal address opportunities afforded by electronic mail, so if you feel you deserve a top-quality indicator of your woodworking allegiances to adorn your dustcoat or apron, please take this opportunity to drop me your details and I'll get the office elves right onto it.

Mark

You can contact Mark on mark.cass@mytimemedia.com

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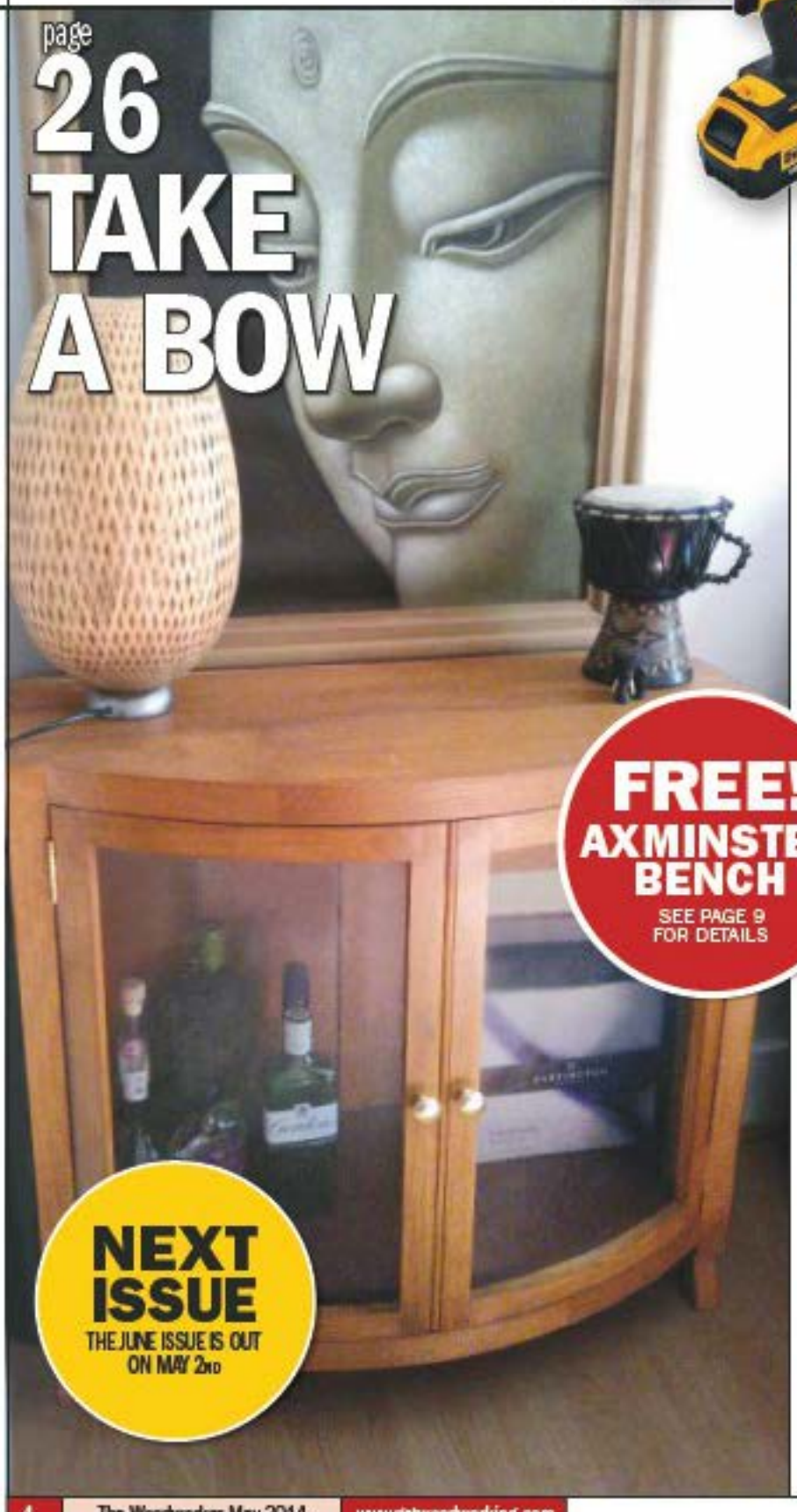

page 26 TAKE A BOW

FREE!
AXMINSTER BENCH
SEE PAGE 9 FOR DETAILS

NEXT ISSUE
THE JUNE ISSUE IS OUT ON MAY 2ND

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The Woodworker & Woodturner

May 2014

Published by MyTime Media Ltd
Hadlow House, 9 High Street,
Green Street Green, Orpington, Kent BR6 6BG

Tel: 0844 412 2262
From outside UK: +44 (0)1689 869840
www.getwoodworking.com

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THE WOODWORKER & WOODTURNER, ISSN 1752-3524, is published 13 times per year (twice in May) by MYTIMEMEDIA LTD, c/o USACAN Media Corp. at 123A Distribution Way, Building H-1, Suite 104, Plattsburgh, NY 12901. Periodicals postage paid at Plattsburgh, N.Y. POSTMASTER: send address changes to THE WOODWORKER & WOODTURNER, c/o Express Mag, P.O. BOX 2769, Plattsburgh, N.Y., U.S.A. 12901- 0239.

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In brief...

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Bosch Professional jigsaws offer joiners and carpenters high precision and controlled tool guidance. The new GST 160 saw comes in two versions, with a barrel grip (CE) or a D handle (BCE, shown above). Each has a powerful 800W motor and weighs just over 2kg. The plastic-coated magnesium soleplate can be tilted by up to 90°. Other features include tool-free blade changing, a dust blower and an LED work light. Both saws come in an L-Boxx case, and cost around £260.
www.bosch.com

Silverstorm power
The latest Silverline spring/summer 2014 catalogue features over 5000 tools for the keen do-it-yourselfer and gardener, including a range of new 12V and 18V power drills, drill drivers and combi drills, a 500W paint sprayer and the Expert multi-tool.
www.silverlinetools.com

Makita boxing clever
Makita has introduced a range of rugged ABS connector cases for tool owners who have purchased Makita tools without a carry case. They're available in four depths, and can be fitted with one of 49 inlays to match the 100 most popular tools and machines, plus their chargers and batteries. The cases interlock to provide safe and stable transport. Strong moulded handles fold flush into recesses in the case lids, and handgrip mouldings enable easy removal from the stack when the latches are unfastened.
www.makitauk.com

A turn for the better
Axminster has added three new items to its Evolution series. The counterbore drive (shown below) is used for accurately locating and driving items such as lamp columns which have already been partly bored through from one end. The boring head can be purchased separately, or with the drive as a kit costing £29.95. Three Morse Taper sizes are available. The other new items are a hollow five chip extraction centre (£33.44) which features three chip ejection ports, and a long-hole boring kit (£62.45).
www.axminster.co.uk

Getting a grip
Irwin's Quick-Grip one-handed bar cramp was first launched in 1969. The latest version features a unique swivel jaw with a jaw lock for cramping uneven materials. The new Quick-Change screw mechanism holds the end jaw more firmly to the I-beam bar, which has now increased the holding load to 135kg. Square holding pads are now featured throughout the range, which covers cramp sizes from 150 to 900mm at prices starting from £15.99.
www.irwin.co.uk

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Based on this all-important observation, Tormek have fitted the TS-740 sharpening station with height-adjustable legs on rubber feet. These allow you to set the worktop height at between 750 and 830mm, so you'll always have the perfect working position to suit your height. The unit is 578mm wide and 390mm deep.

The purpose-built drawers are designed to take Tormek accessory kits. These offer convenient storage for the various jigs and accessories needed to sharpen all kinds of edge tools. Spare stones can be stored on the side of the station.

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METRIC OR IMPERIAL?

Well, no one can accuse the British of rushing into things, and it looks like we might be finally displaying our grudging acceptance of the much-debated metric system. Those of us who have worked in the trade during the last three or four decades have slowly watched its inexorable rise, with occasional – and sometimes surprising - outposts of imperial resistance. A recent case in point concerned a young college student of mine; when quizzed on his ignorance of millimetres, he (rightly) blamed his boss who still insisted on working in feet and inches!

This small sample of reader's letters in response to issues raised last time I think speaks for us all. The past is behind us; we love and respect it, but our collective path leads forward to the future.

Hi Mark!
I'm no spring chicken, but even I have reached a point in my life when I think it is about time we delivered on our commitment (made in the early 1970s, for heaven's sake!) to bite the bullet and adopt the metric system.

Schools were teaching it some time before I trained and started teaching, and I've been retired for a while now, so nobody can really suggest there hasn't been plenty of time to get to grips with the idea. To suggest that metrication involves 'crazy measurements forced on us by Europe' (Dave Hoare, April letters) can only be regarded as the delusions of someone who would like us all to go back not even to the 20th but to the 19th century!

Having had well over forty years to get used to metric measurements, it amazes me that anyone could still find it difficult to get their 'head round' such a simple and straightforward system. Using dual measurements in the magazine would in my view be a retrograde and deeply regrettable move!

Barry Underhay, France

Hello Mark
Like Dave Hoare I was taught imperial measurements at school. However, like British industry I switched to metric ones years ago… not because they were forced on me, but because of their inherent advantages.

Given that we use decimal numbers, the arithmetic involved in woodworking (or anything else) is much easier if we use units of measurement also based on multiples of 10. For example, it's much easier to divide 1519mm by any number than to tackle even half of 4ft 11⅞in. Compare adding or subtracting 854mm and 524mm, and then try doing the same with 2ft 9⅝in and 1ft 8²¹⁄₃₂in!

I'd advise everyone to ignore centimetres (and even metres), and to measure everything in millimetres. If you don't, it's easy to inadvertently switch units between taking the measurement and marking up the timber, as I've found out the hard way!

As for using metric and imperial units side by side - please don't! The risks of confusion are obvious – Derek Lane mentioned the Mars Climate Orbiter fiasco, and there are plenty of other examples.

Apart from the USA the rest of the world uses metric measurements, so let's stick with them. Even Boeing will eventually realise that, in an environment where components are sourced all over the world, it makes commercial sense to use a common system.

Thanks for a great magazine!
Colin Heydon

Hi Mark
Please don't start putting imperial measurements next to metric ones in the magazine; that would really be a step backwards. A few people may have a problem with the metric system, but it's really not rocket science. You mentioned your fully metric plumber, Mark, but many trades have used only metric for years. It's much better to just use the accepted system. Thank goodness they've stopped giving Fahrenheit temperatures in the weather forecasts!

I think Dave Hoare's view that we were fine 'until we had these crazy metric measurements forced on us by Europe' is rather negative. Someone with no knowledge of either system would surely think feet and inches was the crazier system.

Regards
Roger Worrall (pushing 70)

Hi there
Just reading Dave Hoare's letter on imperial rules, and it brought a smile to my face – I'm normally a gummy so and so! I work a hybrid system, with imperial and metric measurements side by side, depending on which is nearer to an actual dimension – 4ft 6in x 240mm x 1⅜in, for example,. My boys just shake their heads and carry on. I would like to see both measurements in the magazine if it's not too much trouble. Keep up the good work.

Best regards
Angus MacDonald, Perth, Scotland

BY MARK CASS

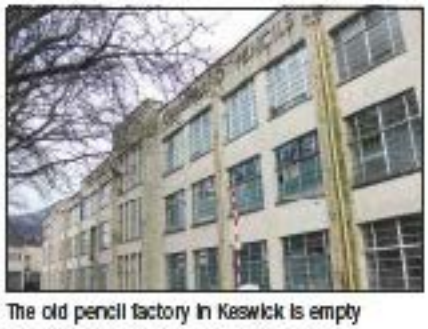
Colours of the rainbow

Have you ever wondered how a pencil gets its insides? While on a recent news-finding mission to the Lake District, the *Woodworker* team dropped by the Cumberland Pencils factory to see how it's done

If there's one thing that should be ever present about a woodworker's person, it would be the humble pencil. While some might argue the merits of marking knives and the mechanical scribe, you can't beat an old-school cedar pencil for ease and convenience.

Big deposit

Following the discovery of graphite in nearby Borrowdale in the sixteenth century (and its subsequent use by farmers for marking their sheep), pencils have been manufactured in the area since 1832. Because the geological deposit was enormous – and unique – it remained the source of the world's graphite supply for nearly 200 years. Its solid form lent it to easy sawing, and eventually the establishment of a fledgling pencilmaking industry which continues today. While every one of us woodworkers knows the value of a decent hard black pencil, let's not forget the coloured versions that have their uses too!



The old pencil factory in Keswick is empty now except for a few piles of shavings

This vintage delivery van may be small, but it could still carry a lot of pencils!

These machines are responsible for mixing batches of China clay and pigment

This violet mix of clay and pigment is nearly ready for the compression and extrusion stages

Hills have ayes

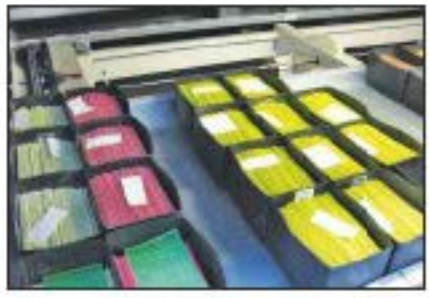
I had imagined a small rustic shed nestling in the Lakeland hills, with half a dozen wizened workers painstakingly crafting each pencil by hand, backed by the sound of birdsong and the kettle gently singing in the background. I'm pretty sure I heard a bird singing at one point, but otherwise there was little in common with my dream.

Based on a new estate in Workington, the present factory is a far cry from the previous place, a sub-Deco building on the outskirts of Keswick. Although a lot less interesting architecturally, the new building – opened by the Queen in 2008 – offers much in the way of light and warmth, commodities unsurprisingly much valued by the majority of factory workers.

Once extruded, the coloured leads are dried and hardened in round wire cages

The hardened leads are then loaded into special metal containers...

...and steeped in hot wax for 24 hours to achieve just the right consistency



After treatment the leads are boxed up, ready to meet their outer bodies

The pencil bodies start life as thin planed slats of Eastern red cedar

The grooving machine mills nine semi-circular grooves in each slat

The slats pass under the glue dispenser which fills the grooves with adhesive

The synchronised lead dispenser then places the leads into the grooves

Secret recipe

We were met in reception by Alan Dakers, the busily efficient laboratory manager, and taken through the plant to the very beginning of the process of making the coloured pencils the company is so well known for. Like many creations prepared at both home or work, the job starts with a recipe. The main ingredient here is powdered China clay, and this is joined in the mix by the required coloured pigment, lashings of water and a special cellular fibre binder to help keep it all together. This is mixed and cooked for three to four hours and, when the timer pings, excess water is removed by vacuum so as to achieve the specific moisture content required.

Gentle extrusion

The coloured paste, like industrial Play-Doh, is scooped from the machine and loaded into a pressurised forming device. Hydraulic rams force the clay into cylindrical blanks about the size of a tin can. These blanks are then transferred into an extrusion machine which spits out a thin 5mm diameter spile – destined to become the 'lead' in a pencil – at a rate far too fast for the eye to count.

These leads, while rigid enough for handling, are not yet ready to be fitted into a pencil body, but need to be gently dried and hardened. To achieve this condition, they're rotated in cram rollers – small cylindrical wire cages – in a warm air current, until they're judged to be ready.

Hot wax

To the layperson, these colourful leads would now appear to be close to their final union with the pencil body, but there is one further step to take... and a crucial one at that. For the pigmented lead to adhere to the paper page, it needs to be of a precise consistency; quite soft and a little sticky.

To attain this status (unlikely as it sounds), the leads are boiled in hot wax. Alan took us to a very warm corner of the factory where rows of steel cabinets full of hot wax ticked and bubbled over in various states of production, looking something like an industrial chip shop but without the salt and vinegar.

A matching grooved slat is glued on top of the leaded section, ready for drying

Once glued, the slats are milled into one of two profiles and declared ready for finishing

The freshly painted pencils head off down the line for lacquering

The finished pencils are lightly baked in an infrared oven to harden the coatings...

...and are then boxed up by colour, ready to pass to the packing department

My favourite machine, called the compiler, makes up complete sets of pencils

The bunches of leads stay steeping in the wax for up to 24 hours, and samples are regularly checked in the lab to ensure that the consistency is spot-on. After drying off, it's finally time to assemble the pencils into the form that we all know and recognise.

THE RIGHT CEDAR

Although there are many species of cedar, the most suitable variety for pencil manufacture is the Eastern red cedar (actually a species of juniper, *Juniperus virginiana*) which grows extensively across North America and Canada. Unfortunately, its excellent rot and pest-resistant properties make the remaining stocks too valuable for use as pencils, so a close relation, incense cedar (*Calocedrus decurrens*) has taken its place and is proving to be a very acceptable substitute.

Cedar slats

The pencil bodies, made of cedar, start life as thin rectangular blocks known as slats. Their first step is the grooving machine which mills nine lead-sized grooves in each slat. This area required that we wear ear defenders to protect us from the machine noise; I was more interested in blocking out the sound of Steve Wright's voice on the radio myself! As the slats emerge from the groove mill they pass under the glue dispenser, which fills each groove with a uniform bead of PVA adhesive.

High frequency

The next stage happened far too quickly for my limited photography skills to capture, but involved the synchronised loading of leads into proto pencil bodies. Half of the grooved and glued slats are treated at this stage and, immediately afterwards, are reunited with the other half and pressed together. In the old factory the slats were clamped up in custom-made G-cramps and left to dry – a slow process. Technology has intervened now, and the freshly glued slats are whizzed on a conveyor belt over to a radio frequency unit where they are dried and fully cured in four minutes flat!

Some more wood milling is required next. The leaded and jointed slats head for the shaping mill, where they're profiled to either a round or a hexagonal cross-section on a double-headed horizontal spindle moulder! It's another very speedy process; much of our visit was spent trying to catch something at rest!

Paint shop

Now that the pencils are fully formed, they're collected in big hoppers and taken to one of the paint rooms. Some will receive their colourful coatings courtesy of the old method, which uses oil-based paints high in VOCs (volatile organic compounds). These are unfriendly to both environment and people alike, not to mention increasing the risk of fire into the bargain. Safer water-based paints are increasingly used in all manner of industrial processes these days, and pencil production is no exception.

Almost there

After the paint coat comes the clear lacquer. This gives each pencil a hard-wearing gloss finish and is dried by passage through a unit filled with ultraviolet (UV) light. I was looking forward to the next bit – the sharpening of the tip – but again it wasn't as I'd imagined. There was no little old bloke inserting each one into a pencil sharpener and turning a handle. Instead the job was done by a rapid-fire streamlined process involving feed rollers, more conveyors and a sanding belt.

Over in the blink of an eye, the sharpening process is one step closer to the finished product. All that remains now is forming the dome-shaped end, imprinting the Cumberland name (or whichever type it is) and applying a final coat of coloured lacquer on the pencil ends.

Cooked and packed

After being hung in rolling holding frames, the pencils are lightly baked in an infrared oven to dry and harden the various coats of paint and lacquer. The finished pencils are then taken to the packing room where they're packed into boxes and gift sets, ready for export around the world.

As he showed us out, Alan Dakers told us proudly: "It's been the best few years we've ever had. We're selling all over the world, and producing on average a million pencils a week." So keep on colouring...

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I raided my small stock of cherry to make this project. It's a good opportunity to use up offcuts; indeed I was so anxious not to waste material that I edge-jointed some of the components to make up the widths required.

This is a typical example of a small project which is quite demanding on skills, patience, and workshop resources. A router table is almost essential for making the drawers. I also tried out an experiment on my planer thicknesser when preparing the ends – a method I've never seen in a book or magazine – and it worked to perfection. More about this later...

Getting started

When preparing the material to be edge-jointed, I planed it a little thicker than required. Because of the small sizes involved I relied on glue alone for this, and once dry I planed the components to the final thickness required and trimmed them to width. I was careful with the thicknessing to ensure it matched my 8mm router cutter and get a good fit in the trenches once these were cut. When preparing the wood for the ends, I cut this long enough for two, but trimmed the ends of the piece square.

The positions of the trenches were now marked on the ends, and I set up my router to cut these to a depth of 8mm. These trenches are stopped, photo 1. I used the same cutter to form the rebates at the rear edges.

BY GORDON WARR

Jewellery store

There can't be a lady in the land who wouldn't appreciate a project like this to store small items of jewellery. Its splayed ends, concave front and restrained decoration give it a unique appearance

The tapering trick

The next stage was to prepare the taper to the ends, which were still one piece of wood. My trick of using the thicknesser for this was to add a packing piece under the side where material needed to be removed, photo 2. This packing piece was planed to a thickness which would raise one side of the wood by 15mm, and was temporarily secured with double-sided tape.

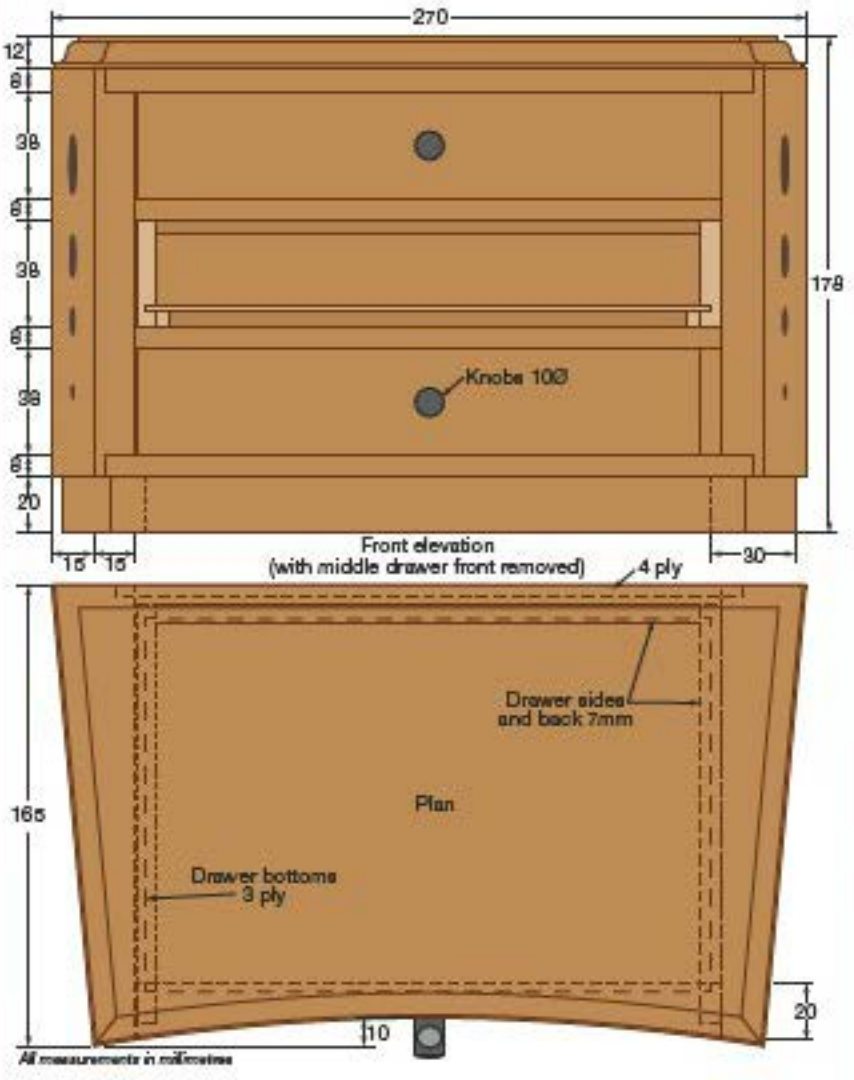
Now the wood could be passed through the thicknesser as normal, photo 3, making

1 The extent of the trenches is controlled by a stop cramped to the router table fence

2 The two end panels are still in one piece at this stage. Note the packing piece...

3 ...which tilts the workpiece at an angle as it's passed through the thicknesser

Fig 1



JEWELLERY CHEST CUTTING LIST

All dimensions are in millimetres

Part	Qty	L	W	T
Top	1	300	165	12
End*	2	170	165	30
Drawer divider	4	260	160	8
Back (plywood)	1	280	146	4
Plinth (from)	1	650	30	20
Drawer front	3	240	38	7
Drawer back	3	240	22	7
Drawer side	6	170	38	7
Drawer base	3	170	38	3

*Prepare the ends as one piece, and cut them to their exact length later.
Widths and thicknesses are net; an allowance has been added to the lengths.
You will also need hardwood offcuts for the inlays and drawer knobs, and self-adhesive baize for lining the drawer bases.

several passes until the whole of the upper surface was planed flat. My experiment was a total success, but I must stress that this technique would not be suitable for a wide piece of wood which was also quite thin; it would tend to flex, while the piece for the ends was relatively thick and therefore quite rigid.

Tackling the inlays

Next, while the packing piece was still in position, I marked out the centres for the circular inlays. They were equally spaced, with the largest disc at the top. I bored the 6mm deep holes for these using my bench drill, photo 4; the packing I had left on ensured that the surface of the workpiece was level as I made the holes. I then used matching plug cutters to prepare the 8mm thick inlay discs from rosewood, photo 5.

Just enough adhesive

When gluing inlays in place, it's important not to use too much adhesive. If a pool of adhesive is left at the bottom of the recess, the inlay can't be driven fully home. The adhesive then dries fairly slowly, and as it does it shrinks, drawing the inlay further into the wood. This can happen weeks after the project has been completed, and will show as a slight depression that's impossible to correct.

After inserting the discs into the end panels, I allowed them to dry overnight before flushing them off, photo 6. Sanding was left until later, which would also give the adhesive more time to dry thoroughly.

Shaping the edges

The front edge of the end panels had to be shaped to match the curved front. In theory this should be slightly hollow, but was simply planed as a bevelled edge with any attempt at making it concave left until later. Now I could cut this single piece of wood to give me the two ends required; only then could the rebates in their ends be formed for the top and bottom. These rebates were made as through cuts.

Matching the curve

Next I made a plywood template to match the curved front I was aiming for. I used my flexible curve to mark this, and a spokeshave and abrasive paper to smooth the sawn edge. Using the template, I could mark out the two drawer dividers, the top and the bottom, photo 7.

The bandsaw soon had the waste removed from these four pieces. I then held them together in the vice while I lightly spokeshaved them and completed the shaping with a flexible drum sander, photo 8. The front corners needed to be cut to match the trenches, which are stopped at the front.

Assembly time

Now the ends and the middle two drawer dividers could be assembled and cramped, photo 9, followed the top and bottom panels. These are screwed as well as glued in position, photo 10. I used a steel rule across the front edges of the four members to ensure they were all in line.

I left the back off at this stage. Where a carcass is to include drawers, its absence helps when the drawers are being fitted, and makes visual checking for alignment easier.

Making the drawers

I prepared the material for the drawer sides, backs and fronts as normal, then cut these twelve pieces precisely to length. The extent of the lap dovetails at the front and the through dovetails were marked with a cutting gauge. Then the two parts making up each joint were labelled to ensure they would be cut and assembled to match.

Tackling the pins

Two pins were marked on the front and rear components, and I cut these to a slope of 1:7. The waste from the rear was removed by a combination of coping saw and chisel, while at the front the bulk of the waste was then removed by boring using a saw-tooth bit. This stage was carried out on a bench drill, with the depth being set to complete the hole exactly to the gauge line. These lap dovetails were finished by chiselling, using my pair of angle-sharpened chisels to cut into the acute corners alongside the pins, photo 11.

Cutting the tails

Now the tails could be marked on the side members of the drawers. This is carried out by marking directly from the pins using a very sharp pencil. Make sure that the labelling of the corners is carefully followed.

The waste from this part of the joint is removed entirely by dovetail and coping saws, finishing off by chiselling. For a sound joint, the dovetail saw must be used alongside the pencil lines, and just touching them on the waste side. Next, the sides and fronts could be grooved for the ply bottoms.

Assembling the drawers

Before cleaning up the inside surfaces of the drawer members, I bored a 10mm blind hole in the centre of each front to accept a simple knob I would turn out of rosewood to match the inlays at the ends. The drawers were then glued and assembled, photo 12, checked to ensure they were truly square and then weighted down so that they would remain free of twist while the adhesive dried, photo 13.

I bored the holes for the inlays using three different sizes of bit in my drill press

The matching rosewood inlays were then prepared using a range of plug cutters

I glued the eight inlays in place, left them to dry and then flushed them off

I made a template to mark the concave edges of the top, the bottom and the drawer dividers

Cramp the dividers together while you smooth their concave edges. I used a drum sander

Separate the two end panels, rebate them and assemble them with the two drawer dividers

Then glue and screw the top and bottom panels into their rebates in the carcass

Use a small chisel with an angled edge to trim the waste from the drawer dovetails

Glue both parts of the corner joints when assembling the drawer boxes

Put a weight on top of the assembled drawers to keep them flat while the glue dries

Use a simple template to mark the positions for the drawer stops on the dividers and bottom panel

Test-fit the drawers in the carcase. Note that the drawer fronts are still flat at this stage...

...until their concave faces are marked from the drawer dividers and cut to shape on the bandsaw

Fit the drawers, cramp the carcass and sand its front surface so everything is perfectly flush


Turn and shape the three knobs on one blank, then separate them using a parting tool

Form a decorative edge moulding round the edge of the top panel on the router table

Glue and cramp the moulded top panel to the top of the carcass

Mitre and shape the three plinth components, then glue and cramp them in place

Apply three coats of cellulose lacquer, flatting the finish down between coats

Glue the knobs in place in their holes and stick self-adhesive baize inside the drawers

Meanwhile I added drawer stops to the carcass, photo 14, using glue alone for this. Then I tested the fit of the drawers in the carcass, photo 15.

Shaping the drawer fronts

Very little further fitting was required. Only at this stage were the fronts of the drawers given their concave shape. The curve was marked directly from the drawer dividers in the carcass; then the waste was cut off on the bandsaw, photo 16.

Smoothing these sawn surfaces to match the front of the carcass proved to be easier than anticipated. I used my foam-filled drum sander, photo 17, followed by hand sanding.

Turning the knobs

I started these by turning a piece of rosewood to the same 10mm diameter as the holes in the drawer fronts. I then formed two shallow finger grooves on each knob using a rat-tail file across the work so they were opposite one another, photo 18. The three knobs required were formed in this way while the wood was still in one piece, and were then separated using a parting tool.

Next, each one was held in a drill chuck mounted in the headstock, and the outer ends were domed. Only very light sanding was required to complete them.

Topped and tailed

The next task was to prepare and fit the top panel. I made this to be 2mm smaller than the carcass at the front and ends, and formed a simple moulding along these edges on the router table, photo 19. This panel is glued and cramped to the top of the carcass, and is inset by 2mm from the front and side edges, photo 20. At this stage I added the plywood back, glued and pinned in place.

Only the plinth remained to be tackled. This is simply three pieces of material mitred at the front corners, with the front piece formed with a concave front surface. They're glued and cramped in place, photo 21.

Finishing touches

After a final sanding, including lightly rounding the arrises, it was time to apply the finish. I used pre-catalysed cellulose lacquer applied with a polisher's mop, photo 22. I dilute the lacquer with around 10 per cent of cellulose thinners, and flat down between coats. I abrade the top coat lightly with steel wool dipped in a soft wax polish, and finally burnish it with a soft cloth.

With the polishing completed, the drawer knobs were glued in place, and self-adhesive baize was fitted to the drawer bottoms, photo 23. Job done!

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BY JEN POWELL

Take a bow

This project was an adaptation of the final year assignment for my level 3 diploma in bench joinery. We were expected to make a small bow window, but I decided to make a bow-fronted drinks cabinet instead – far more useful, I thought!

It all starts with the design process – minutes (or should that be hours?) of frantic sketching, followed by about a day of working out exactly how the thing would (or could) go together. Then, like doing a historical reconstruction, I had to meticulously piece together that patchwork of new knowledge into a clear plan and, at last, a workable rod. I hadn't made a complete piece of furniture before, and I was about to find out just how big a mouthful I'd bitten off! However, I really like a challenge… and, thankfully, a good panic too; this little journey was fraught with both.

Day 1: curves

Building a decent former was task one. The cabinet would need four curved pieces in total, two laminated and two segmented, as I needed to demonstrate both to the examiner. I managed to get the first lengths of 3mm thick softwood into the former by the end of the day, while piecing together the segmented lengths and gluing them up in an overlapping brick pattern. I left the glue to dry while I sourced the birch plywood that would become the box carcass of the cabinet.

Day 2: machining

Most of my time was spent making templates, setting cutter positions, smoothing, thicknessing, switching the extraction on and off and waiting for supervision, but at the end of the day I had two smooth segmented curves and the second laminated curve in the former.

Days 3 & 4: the frame

Some really interesting joints happened here: dovetails to lock the top and bottom of the frame into the jambs. Pretty much everything would be relying on this section to be not just square but strong. The front feet were also formed and little stubby back ones made to match.

The bow frame has segmented curves at the top and bottom

Curved rebates will house the top and bottom cabinet panels

The carcass is glued up and cramped. Note the centre back divider

When the carcass came out of the cramps, one corner mitre was a bit disappointing

The back feet were shaped to match the profile of the front legs...

...and were attached with two thick glued dowels for a strong and simple fixing

The curved join between the top panel and the frame of the bow was tricky to assemble

The doors were held flat in cramps; note the use of winding sticks to check that they weren't warped

Cleaning up the curved door frames was a very satisfying process

The meeting edges of the doors had opposing rebates and a fat centre scratch bead

This door detail shows the inset catches, the scratch bead and the rebates (and my feet!)

I used a paper template to mark out the shape of the faux leather base panel

The completed unit cabinet is awaiting its acrylic door panels and a finish

You may remember the frame was made with segmented curves at the top and bottom. As it turned out, laying the frame on its back and squeezing the joints together in a quickly-made jig didn't have the desired effect.

Disaster strikes

I was gently tightening the sash cramps, and when I heard the first crack I realised that those loose tongues and the glue around them wouldn't be enough to hold the segments together. You can probably imagine how the air turned a lovely shade of blue! However, I found a solution through all the hyperventilating and choice phrases. I'd kept the former from making the laminated curves, and yes, the curve was the same radius (it had to be). More glue on those joints, a few quick-grip cramps and some fast thinking and we were back on track.

Day 5: the carcass

After the previous day's panic, this part was quite simple – a gentle bit of cutting to size, a spot of biscuiting and some cleaning up. The hardest part again was gluing and cramping up; we eventually came up with an epic solution using a couple of saw horses and a team of lads!

Days 6, 7 & 8: the doors

A fair amount of machining happened here. A spindle moulder was the favoured option for rebating the curves, rather than a hand-held router which proved far too unwieldy. The mortises and stopped tenons were chopped out by hand – quite a fiddly job – and another more complex jig was needed to glue these up.

Hanging the doors took an absolute age; compensating for the 2mm gap between the stile and the jamb was very tough. I did get everything to line up in the end, though it took quite a few tries.

A helping hand

I have to say at this point that the constant, patient advice, understanding and support I was offered – not only by my own tutor but pretty much the whole of the department – was mind-blowing. I only attended college one day a week so this project spanned nearly three months, and it was followed closely as it progressed by everyone who could spare the time to be involved.

And finally I got to take it home to my partner, to our first home in North London where, now varnished and fitted with plastic panels in the doors, it has pride of place in the lounge. It currently houses a bottle of vodka, some blackberry whisky from Norfolk and the dregs of a bottle of grappa. We've christened it Vladimir, after the vodka!

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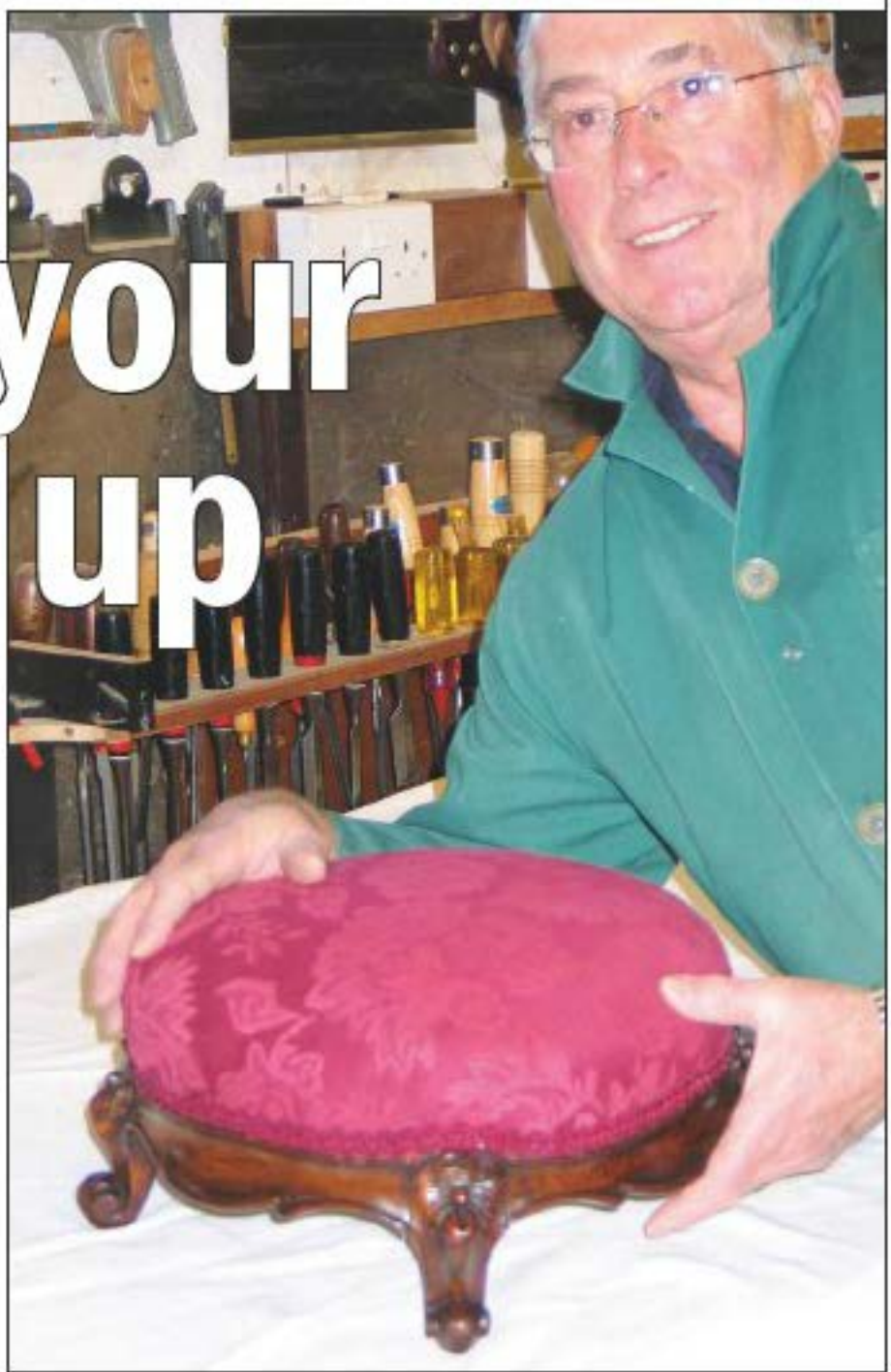
BY PETER BISHOP

Put your feet up



Regular readers know I like buying stuff from auctions and doing it up. It's a hobby that gives me a lot of pleasure, and occasionally makes some money too when I'm able to sell what I've restored. Here's the story of my latest rescue act...

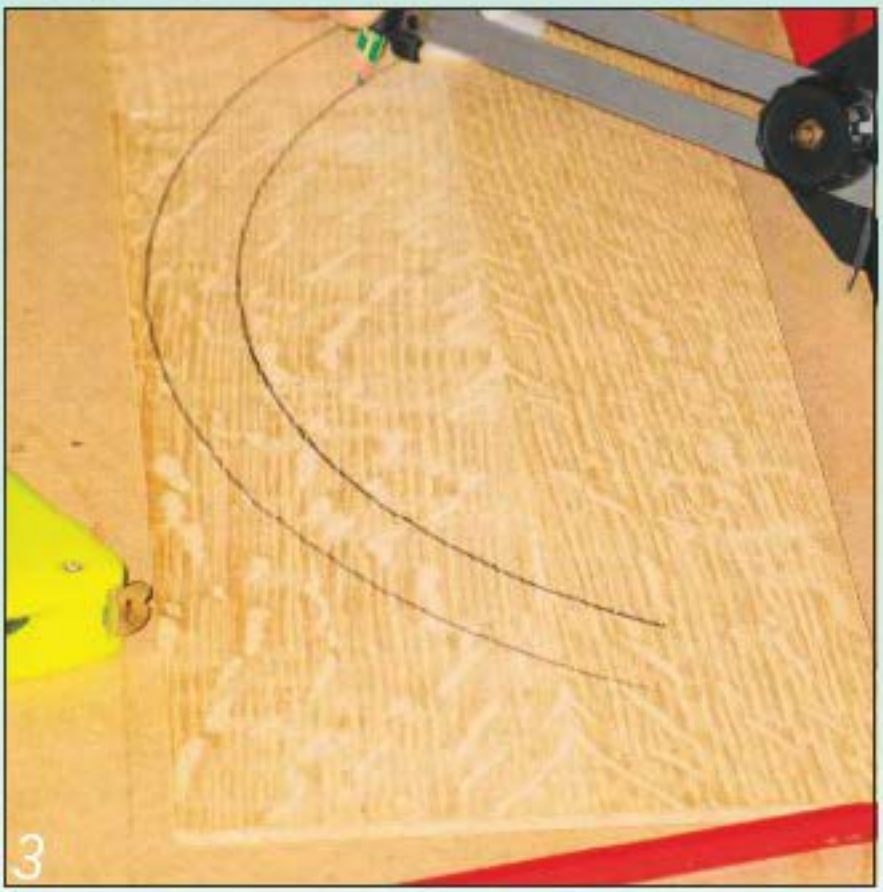
When I hear of an auction I usually browse through the catalogues first, go and take a look if I'm interested and then leave a bid on. My wife complains that she never gets to go to a live auction so, in a moment of weakness, I said we could go to the next local one. It was a big mistake! I won't go into detail, but every time the auctioneer was struggling to get a bid I got an elbow in the ribs saying "That's cheap". Yes, I thought, if you really want it. Anyway, the top and bottom of it was that we ended up leaving with a very eclectic assortment, including this attractive carved walnut period footstool, photo 1.

Stripped for action

At home, in daylight, I appraised what had to be done. We'd hoped simply to recover the stool but, on closer inspection, the fabric above and below was shot. There was no choice really; it had to be stripped

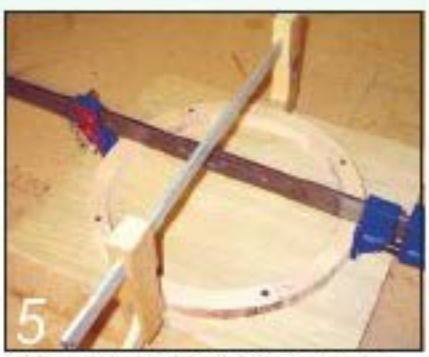
This is the stool fresh from the auction – a bit grubby, but with potential!

A closer look at the stripped-down frame revealed that it was a bit fragile all round



After taking some measurements from the stool, I marked out a template on plywood

The four sections are cut out on the bandsaw from one piece of beech to minimise waste



The four sections are then half-lapped, glued, screwed to some scrap mdf and cramped

back and rebuilt. I carefully removed the various layers stage by stage and stacked them in reverse order so I could refer to them when rebuilding.

The bare bones

With all the material, hair and hessian off, the full extent of what needed to be done was exposed. Walnut is a fairly soft wood. This stool had been reupholstered several times in its life – over 100 years at least – and the top ring was so full of tack holes, photo 2, that I thought it would be difficult for any more to hold. The solution I came up with was to build an extra layer on top. This ring would be screwed down but not glued; this meant that the work would be reversible in the future if anyone so desired.

On the beech

My wood of choice for sub-frames is beech. This close-grained wood is tough and strong, and will take upholstery tacks many times without breaking out. I worked out what the outside diameter of the upper frame was and marked out a template on some plywood, photo 3.

With this made, I then planed a piece of beech to about 15mm thick and used the template to mark out four sections on it. A little care is needed here to make sure the grain wraps around with the curve of the template if possible. They were then cut out on the bandsaw, photo 4.

Next, the four pieces were laid out so I could establish the points at which they overlapped. This done, I cut some half-lap joints and the ring was ready to be made. Glued, clamped and screwed down onto a bit of scrap mdf, photo 5, it was left to dry. Once the glue had cured I took the ring off the mdf, removed the screws, and put to one side.

The frame restored

The stool frame itself needed a fair bit of attention. I tried to remove as many of the old tacks from the wood as possible. Some upholsters simply leave them there or knock them in: lazy so-and-sos! Bits of walnut had dropped off here and there, so I glued the biggest ones back in place. Once they were sorted the ring could go on. It was fixed onto the old wood with four screws through the original gluing-up holes and four more in between, photo 6. I was happy now that the reupholstery could go ahead.

Washing my hair

The best material to pack out and shape any upholstery project is horsehair. It's pretty expensive to buy, and usually comes in a mix of about 60/20 horse and hogs' hair

these days. The other option is to use coir. This is the fur, if you like, off the outside of a coconut husk. It's used for all sorts of things, including door mats, but it's not as good as the real stuff for upholstery.

We try to salvage any horsehair that comes with an old piece of furniture. Usually, like the hair off this stool, it's filthy after years of use. The answer is to sort it, taking out any extraneous stuff like tacks and string, pop it in an old pillowcase, sew the end up and bung it in the washing machine with a bit of conditioner! Once it's washed, simply take it out of the pillowcase, spread it around on a table and leave it to dry. Later on the hair needs to be worked so that the strands are separated and not left in balls. It's then ready for use.

From the bottom up

Reconstruction of this stool started with a layer of calico across the bottom and then four pieces of webbing stretched and tacked in place, photo 7. Next there's a layer of hessian, tightened and tacked down. Then with decent string and a large curved needle, make some loops around the edges and across the middle, photo 8. This is to hold the hair in place and stop it slipping around.

The clean, teased-out hair goes on next, photo 9, building an even layer that, when covered, will provide a firm, level cushion. After this, another layer of hessian is tightly stretched and fixed down all round. If necessary, the hair can now be moved around a little with a long, straight needle, photo 10, to make sure the shape is even and balanced.

A roll is then formed around the edge of the stool, photo 11, using the string and curved needle. I looped the string through the hair and hessian, making sure I didn't go right through to the lower calico.

Wax and polish

At this stage any smartening up of the show wood needs to be done; this will avoid staining the top layer of fabric. I used some medium brown liquid wax which I applied all over and left to dry, photo 12. This was then buffed off, and it brought the whole of the show wood back to life.

Back to the hairnet

Next, a layer of cotton flock goes over the hair-filled hessian, photo 13. This is to help prevent the hair from working its way out and poking out through the finished fabric surface. Some discussion with the boss resulted in the selection of a rich, red, florally embossed fabric for the new cover.

The top ring was screwed on to the stool base to provide a sound base for the new tacks

A layer of calico and four strips of tensioned webbing are tacked to the ring first

A layer of hessian comes next, followed by string loops to hold the hair padding in position

The hair is worked into place across the top of the hessian and is held by the string

With another layer of hessian on, the hair padding can be evened out if necessary

Create the rolled edge by sewing string stitches all round with the curved needle

Now is the time to tart up the exposed woodwork with some liquid wax

A layer of cotton flock stops the hair from working its way up through the cover fabric

The cover material is tacked on carefully all round and the excess is cut away

The quickest way of fixing the decorative trim on is with a hot glue gun

After further discussion, we decided how to arrange the pattern and I started to fit the top coat. Drive in a tack at one side, then tighten the fabric across to the other side and fix it there. Check the pattern to make sure it's centred. Repeat this for the other quadrant – a tack in one side, tighten across and fix. Check the pattern again.

Once I was happy with this, I could work my way round tacking the top coat tightly down just above the edge of the carved show wood. You need a good bit of margin all round so that there's plenty of material to grab hold of and pull tight. The tacks were spaced about 18mm apart, and a few small pleats took up any slack.

Trimming to fit

Cutting the excess fabric off can be trying, especially if there is a tendency for it to run. A little trick I have is to work some PVA glue into the material just below the tack line and then leave it to dry. You have to make sure you don't get any on the top fabric where it will show. The glue will harden the material and stick the weave together so it won't run and spoil your work above. A very sharp craft knife run around just below the tacks, photo 14, will then make short work of trimming off the excess material.

Hiding the fixings

The tacks now need to be covered. There are various strips or rolls of woven edging material available for this job. Whatever you choose needs either to match the colour of the top fabric or be a complete contrast to it. We knew what we wanted, so off the boss went to the local material supplier to look for something suitable.

With her choice of edging braid in hand, I could now finish off the stool. There are several ways in which this can be attached. Very fine, coloured gimp nails are the traditional method. My choice, and that of most other upholsterers these days, is a hot glue gun. It's simple and easy to use, doesn't fray the material and makes a good, permanent job. It's also easy to take off when the piece needs to be reupholstered again. Working in short sections, the edging is moulded round the curves and fixed on, photo 15. Apply a bit of extra glue where the ends meet, and it's all done.

A sting in the tail

Of course this wasn't really the end of the project. I should have realised that once we had one stool covered with this particular material, all the others would have to match! Hey ho: onwards and upwards! Next time I'll go to the auction on my own!!

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Setting up a bench mortiser

This occasional series is all about setting up and fine-tuning a range of standard woodworking machines and power tools. It also explains how to extend their usefulness with accessories and jigs. This month we're looking at the bench mortiser

1

This bench-top machine will cut a mortise up to 16mm wide in softwood

2

A bigger machine will handle larger mortises with its 25mm capacity

Like most of the machines that are now commonplace in our home workshops, the bench mortiser became more popular once it had begun to appear in the American woodworking programmes that filled our TV screens in the mid-1990s.

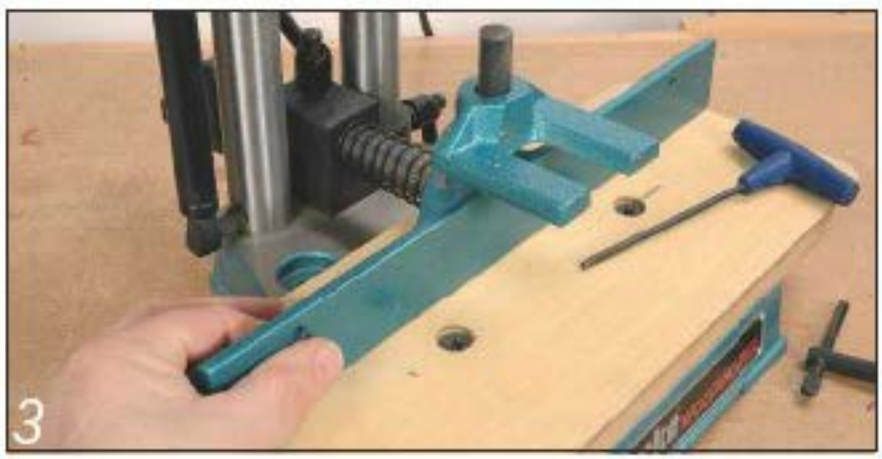
The instructions for use that came with these machines were never that clear, and what made matters worse was that most of them were supplied with a set of cheap chisels. Combined with our obsession with using softwoods, this usually made for a disappointing result. Fifteen years later the situation has got better, but there are still a few things that can be done to improve the end results immensely.

Two types

This article is about dedicated mortisers – machines with the sole purpose of producing mortises. There are accessories designed to fit on a conventional drill press and convert it into a mortiser. However, the mechanics of a drill press can easily be overloaded by the forces required to drive the square chisel into the wood, even if the centre of the hole has been removed. You only have to compare the thickness and length of the operating handles on a mortiser with those on a drill press to see the problem.

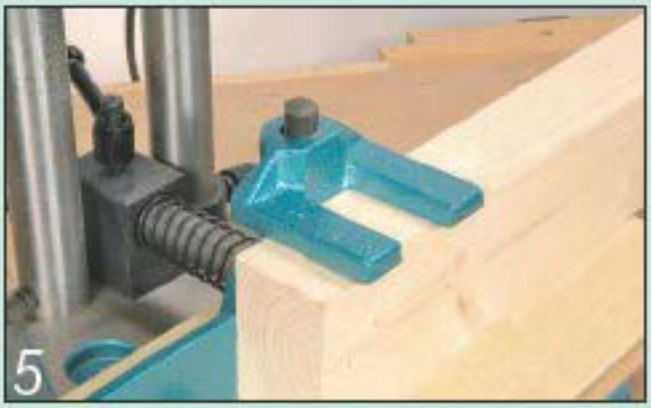
Cheap and cheerful

Small 'portable' mortisers will usually be capable of driving chisels up to 13mm



The fence of a small mortiser is adjusted by hand and locked into position

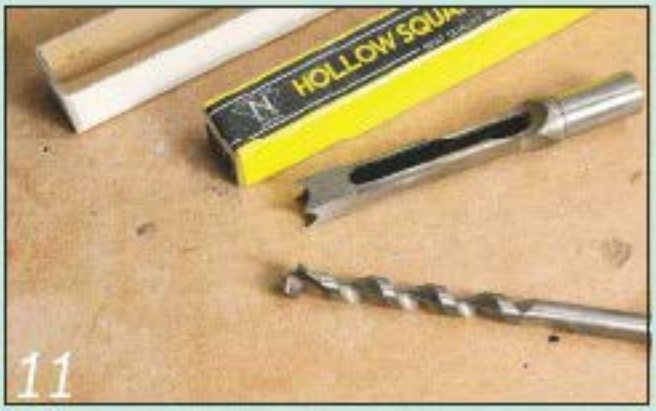
On the smaller machines a basic micro-adjuster helps to fine-tune the positioning



The work is held down with an adjustable fork so the chisel can be withdrawn

Larger machines have to be partially dismantled before they can be moved

The cross vice can be moved forward and backwards and left to right to position the work under the chisel



Japanese-pattern chisels cut more quickly and are less likely to clog than English-pattern ones

You will need to hand-finish the cut mortise with a little chiselling if you want perfection

wide, or even a little larger. These small machines are perfectly good enough for most jobs. Their big advantage is that they can be put away under the bench when they're not in use. Where working room is at a premium, as in most workshops, this will free up valuable bench space.

Apart from their size, the main difference compared with larger machines is the method of holding the work. These small machines have a flat bed and an adjustable back fence that is used to position the work under the chisel. An adjustable fork arrangement holds the work down as the chisel is withdrawn from the wood. Sideways adjustment is made by sliding the work along the fence and holding or clamping it in position during the cut.

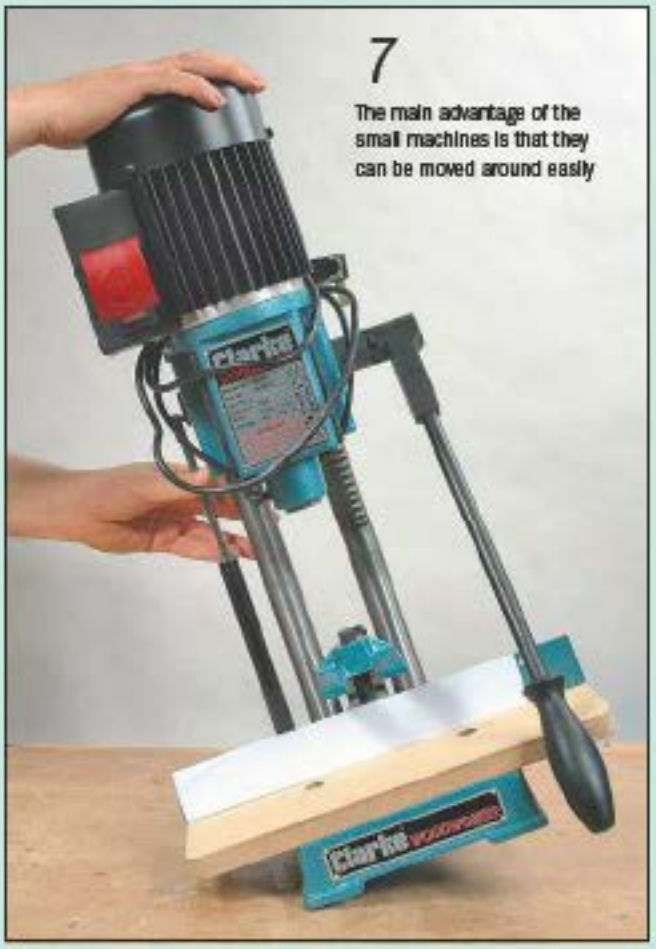
Bigger and better

The heavier machines are capable of cutting mortises up to 25mm wide. These machines are not practical to move about in one piece unless they are mounted on a wheeled cabinet of some kind.

Other than size, the main difference is the cross vice that holds the work in place. The wood is held in the carriage, against the

The work is held against the fence using hand pressure

Cheap chisels will do the job, but aren't of the best quality and tend to be relatively noisy in use



Fit the chisel and auger to the machine using a coin to space the shoulder away from the yoke

Loosen the chisel, remove the coin and tighten the chisel up against the yoke

fence. It can now be positioned by moving the carriage forwards or backwards to position it under the chisel. It is then locked in place using the built-in clamp, and sideways movement is made by moving the carriage from left to right or vice-versa.

Peace and quiet

Mortisers are one of the quietest machines in the workshop. Their induction motors drive the chuck directly, with no gearbox or transmission to generate any noise. The only thing that can set the teeth on edge is a badly adjusted auger bit.

Chisels and bits

Make sure you are using good-quality chisels. There are lots of sets in wooden boxes around that are fine for just chopping out a rough mortise. These are mainly of Chinese origin.

For better results, go for the more expensive chisels. These can cost more than an entire box of cheap chisels, but the difference is well worth the extra expense. There are two types of chisel: the English pattern and the Japanese pattern.

Mark up the mortise and cut in the lines to ensure a better finish. Mark both sides when cutting a through mortise

The mortise is cut in steps, as this cutaway shows

The finished mortise is completed in next to no time!

Slow or fast?

English-pattern chisels have a double helix auger bit with two spurs and no lead-in points, and cut relatively slowly. The advantage of a slow speed is that the mortise produced tends to be cleaner. Japanese-pattern chisels have a single helix auger bit with a single spur and a lead-in point. This makes them easier to sharpen and quicker to cut, and also less likely to get jammed.

Setting up the cut

Regardless of type, the setting up of these chisels is identical with the exception of the clearance. As the Japanese pattern chisels remove larger pieces of waste, it is advisable to increase the clearance slightly to prevent the waste jamming in the tip of the chisel. This clearance will also vary according to the type of wood and the size of bit. The following is a starting point from which fine adjustments can be made.

Coin spacer

Set up the chisel and bit so they're pushed into the machine as far as possible, using a 2p coin to space the shoulder of the chisel away from the yoke. The bit is in contact with the chisel at this point. Loosen the chisel, remove the coin and, using the fence to square its position, push it up tight to the yoke and retighten it. This will create a gap between the chisel and the auger at the business end so the waste can be pulled into the chisel and ejected through the relief slots.

These chisel and auger bits are supplied with long shafts that will usually need cutting down. This is because the distance between the yoke that holds the chisel and the chuck that holds the auger bit varies considerably from one machine to another.

Chip discharge

Ensure that the waste relief slots in the chisel face to the left or right of the machine. The chisel will then be able to discharge the chips into the open mortise. A common mistake is to set the chisel with the slot facing forward; most photographs of mortisers have it set this way to show that there is a slot there. This means that the walls of the mortise will block the slots and restrict the chip removal as the chisel is plunged into the wood, forcing the chips higher up the auger before they can be ejected. The result? They jam the chisel and cause it to overheat, risking burning the wood and drawing the temper of the steel. This can soften the cutting edge and make the chisel ineffective.

Marking the cut

The first thing to do is to mark the position of the mortise and cut in the pencil lines with a knife to make a clean sharp edge to the mortise. Cutting the marks in like this prevents the mortiser from dragging the top edge of the timber into the mortise and making it look soft instead of crisp. Mark the other side of the timber too if you're cutting a through mortise.

Staircase cuts

Progress the cut, working down in small steps starting from each end. Make the first cut at each end of the mortise as deep as the chisel is wide; this will give a crisp end to the mortise. Then move in a whole chisel width and make a cut twice the depth of the first and so on, making a 'staircase' cut. Then go back and repeat the process until the full depth is reached along the length of the mortise.

Avoid overlaps

Don't try to make overlapping cuts or to trim the ends of the mortise, as the chisel will just deflect and bend... or even break. For through mortises, work from both sides into the middle. Trying to cut straight through is bound the end up with an inferior result.

It's usually the case that the length of mortise doesn't divide up perfectly into multiples of the chisel's width. Remove the remaining waste from the centre of the mortise with the chisel positioned centrally above it, so you don't impose any uneven wear on the cutter.

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BY PETER DUNSMORE

Marquetry: a beginner's guide

The art of marquetry has been around for thousands of years, and was first practised by the ancient Egyptians. It is simply the inlaying of wood veneer – or even brass, pearl or other precious material – into another surface

The application of some marquetry can embellish or personalise a piece of furniture, and is not as difficult as it may at first appear. The main ingredients are a sharp knife and a lot of patience. I've made a few music stands over the years – my most recent featured in the February 2014 issue of the magazine – and as a means of personalizing them for the recipients I often inlay either their name or some other decorative feature into the main surface. The following article explains how I tackle inlaying a name.

The right veneer

Begin by selecting two contrasting pieces of veneer. You should look for veneers that are flat and reasonably straight-grained, as this will make them easier to cut. An immediate instinct is to select ebony for the lettering, but this is too hard to cut with a knife as well as being very expensive. I try to avoid dyed black veneers, as these can cause problems when it comes to the finishing stage.

A good start is to use some plain maple as the background veneer, with a contrasting straight-grained walnut veneer for the letters. Both timbers are easily cut with a sharp knife and stay relatively flat while being worked.

The right equipment

Very few tools are required for marquetry. The knife I've found to be the best is the Swann Morton No 3 scalpel fitted with a 10A blade. The blades come in packs of five costing a couple of pounds, and last a long time before they need replacing. A cutting mat not only protects the work surface but also helps to keep the blade sharper for longer. A roll of veneer tape is ideal, or alternatively some gummed paper, plus some carbon paper, a sharp pencil and a small bottle of PVA adhesive.

The right type

The next step is to select the style of lettering – called a typeface or font – for the name, and this is where a computer comes into its own. An italic font works well, as the lettering flows from one character to the next. Once you've chosen one you like, type the name, enlarge it to whatever size is required and print it off. Gather up your tools and materials and find somewhere to work that offers good lighting and a flat surface. For me this is the kitchen table!

The right sequence

Rather than trying to explain each step in text alone, I've taken a series of photographs as the marquetry develops so you can see the main points to look for. In the next article I'll explain how to make a small corner flower motif that includes sand shading to add some depth to the picture. I'll also explain a little more about laying the picture and cleaning up afterwards.

Selection of the veneers is obviously important. Two contrasting colours with a straight grain are ideal for this style of marquetry. They also need to be reasonably flat!

Tape the computer-printed wording to the main piece of veneer along the top edge so the pattern can be lifted up and down as required

Place a piece of carbon paper between the pattern and the maple veneer. Note the Swann Morton scalpel fitted with a No 10A blade

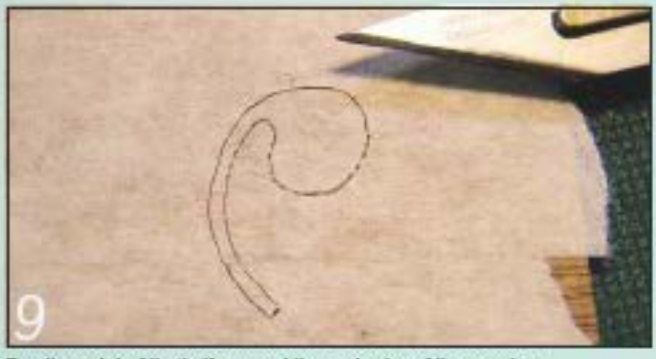
Use a sharp pencil to transfer the pattern to the veneer below. Work on one letter at a time; otherwise the remaining letters will just get smudged as you start cutting the veneers

Cut out a small section at a time. Note how I hold the blade at a slight angle so the bevel of the blade is vertical. This makes for a much neater join between the two veneers

I've stopped cutting this part at an overlap as it's much easier to work with smaller pieces. Several shallow cuts are better than trying to cut through the veneer in one go

Veneers are brittle, particularly when cutting a thin strip across the grain. Moisten some veneer tape and stick this to the face of the veneer to hold the fibres together

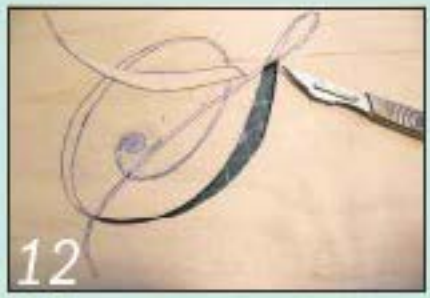
Place the walnut veneer, tape face up, underneath the window opening in the maple veneer. Here I've kept the grain direction of the letters running from left to right



Run the point of the knife around the perimeter of the opening to mark the tape. On very tight curves I use the point of the blade to prick out the pattern

Cut out the walnut veneer, taking care to cut on the line. It needs to be an accurate fit into the opening – neither too big nor too small

If the fit is good, use the scalpel handle to push the veneer into place. If it's a little loose, rub some PVA adhesive into the joins with the tip of your finger to swell the wood slightly and close up the gaps



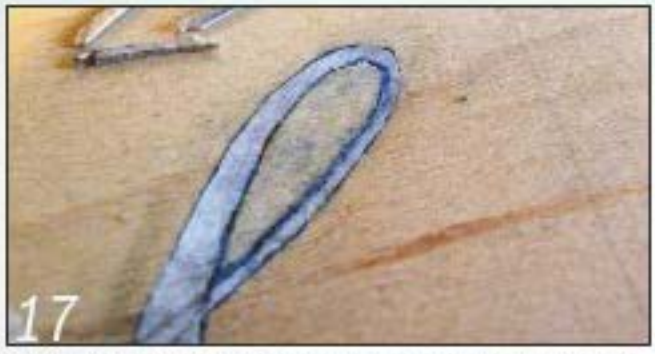
Move onto the next section of the letter and repeat the above process. Think about what's going to fall out when the opening is made!

On some larger pieces, you'll need to use veneer tape to hold the insert in place. Avoid putting tape on the rear of the picture as this will make it difficult to glue it to the base at the end stage

You can cut very thin strips of veneer if you use a sharp blade. These need to be handled with care to avoid breakages, as they never seem to go back together again satisfactorily

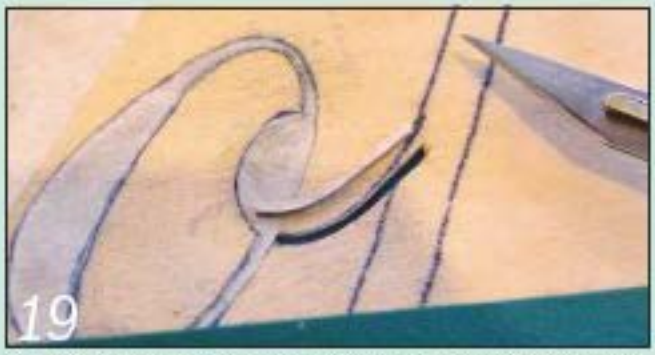
This loop needs to be treated in two separate stages. Cut out the outside loop, but don't discard this piece as waste as was the case for the previous steps

Cut and insert the walnut veneer complete with the veneer tape on the top surface, rub in a little PVA adhesive and allow this to dry. Using the pattern, draw the inner teardrop shape of the loop and cut this out



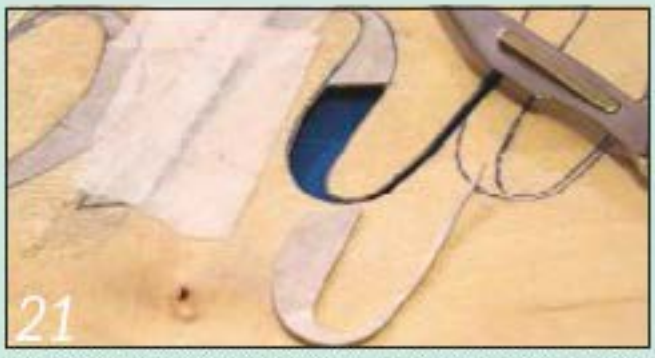
Now reuse the cut-out loop from step 15 as the infill for the window you've just cut into the veneer. By using the same veneer you guarantee continuity of the background maple grain flowing through the lettering

Keep plodding way until the first letter is cut into the background veneer. The face of the work looks a mess at this stage, but all will be well when the surface is cleaned up later



Continue along the rest of the name. Note how on the letter 'o' I've carried the cut for the tail on into the vertical part of the 'p'. This is rectified when this letter is cut, making for a far neater finish

The loop on the letter 'p' is treated in the same way as the one at the top of the capital letter 'S' to ensure continuity of the background veneer through the letters



The letter 'h' is cut in two parts, with the join running horizontally along the grain. When they're fitted together it will be impossible to see the join

The same applies to the letter 'e' at the end. It's far better to treat this as two components, so long as the join is with the grain if at all possible

The small internal components are cut out using a series of small pricking cuts with the point of the blade. Support the knife by resting your little finger on the work surface close by and using this as a pivot

The completed picture is ready for laying. The front may look messy, but it's more important to keep the rear surface clean so wood sticks to wood with no tape in the way

The rear face looks fine. The only problem is that it's back to front, but this will all be resolved when the picture is glued down, the gummed paper removed and the surface finish-sanded

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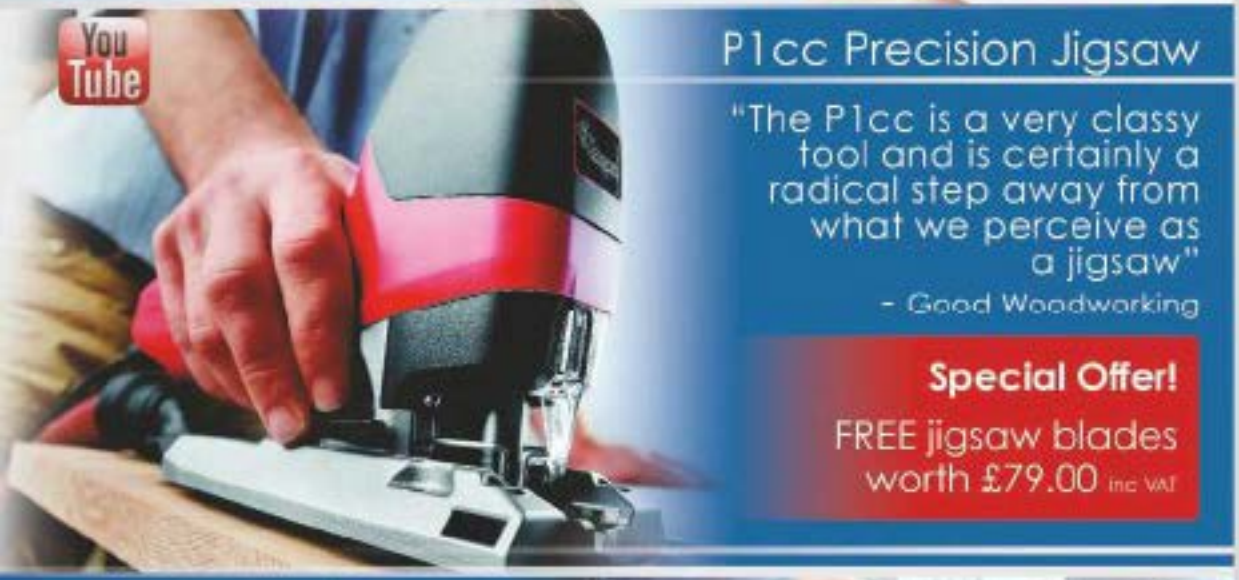

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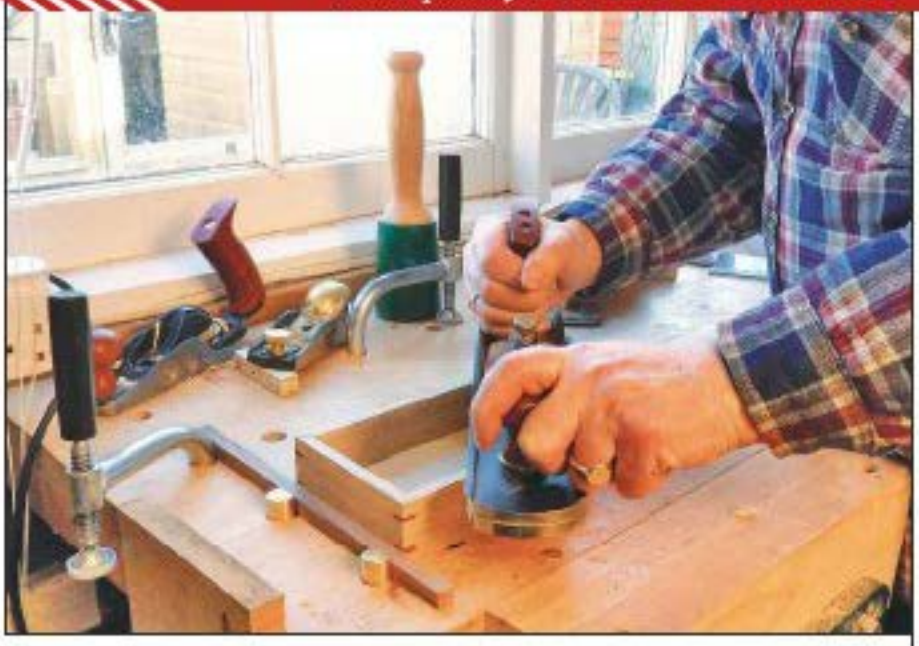


BY MICHAEL FORSTER

RAISING MY GAME 3:
Good kit matters

Welcome back... or maybe you're new here, in which case you'll need to know that this short series of articles is all about taking small steps towards finer woodworking. Here's my latest report...

I've been holding forth a bit about the remarkably simple changes I made in my woodworking that had a disproportionate effect on the satisfaction I get from it. These little steps enabled me to leave behind the really quite poor work I was doing a number of years ago, and begin to aspire to something rather more satisfying.

First off, I looked at those critical first stages: timber preparation and marking out. It might seem too obvious for words, but if the timber isn't true then the marking out won't be accurate. And if the lines I'm cutting to are badly-drawn, then I can't expect a good outcome.

Growing in confidence

Having got to the stage where my timber was straight and true, and my marking out more precise, I began to feel a little more confident – but I knew that there were still serious stumbling blocks in the way, and one of them was the kit I was using.

Now, if anyone thinks I'm about to give them an excuse for a spending spree at the next woodworking show, I'm sorry to disappoint, because you don't need a shedload of expensive kit in order to do good woodwork – but the really essential tools do need to be fit for purpose.

Less is more

When I started to entertain the possibility of finer woodworking, my small workshop made it sensible to concentrate on small-scale work – hence my choice of box making. I also knew that I really wanted to do as much as was feasible by hand – in particular, the joints and the finish planing. So a very few very good tools for those

My earlier lack of confidence with a hand plane is revealed by the extensive machine ripples in this 40-year old coffee table

To help me confront my demons, a good plane was high on my 'most wanted' list. This is the bevel-up Veritas low-angle jack

This bevel-up plane gave a great finish on some African blackwood (left) which tore out badly under a standard-pitch plane (right)

If your budget is tight, the Quangsheng version with its three interchangeable blades is well worth considering

A mouth that's easily adjustable is essential for achieving a good finish, especially on difficult grain

There's something extremely therapeutic about taking off a series of fine shavings with a well-tuned plane

tasks topped my wish list, while things such as sash cramps were given much lower priority. The details may well of course be different for you, but the principle is the same: concentrate on the kit you really need for the work you really want to do.

Making a start

So, what would be the first purchase for my new improved tool kit? Well, one of the marks of mediocrity was my plane work. Nothing I made ever came out truly flat or properly smooth. I still have a nest of coffee tables with tops covered in machine ripples because when I made them I didn't have the confidence to hand-plane the wide surfaces. I keep them as a reminder of how I've improved.

That's a good example of why a hand plane is still needed in these mechanized days. Powered planers will get a good basic working surface, but apply a bit of finish to it and the flaws will show. Anyone doing serious joinery or furniture making is some day going to have to pick up a hand plane.

Peace and quiet

There are alternatives such as belt sanders, and some people will swear by them, but they don't give the kind of ultra-fine control that a hand plane does. They're noisy, dusty beasts that require the compounding racket of dust extraction. It's all a far cry from the therapeutic atmosphere of fine, translucent shavings rolling up the mouth of the plane in a quiet workshop to the accompaniment of some favourite music…

A learning curve

Reading some articles on planing opened my eyes. So metal planes of 1970s vintage weren't designed to be used straight out of the box, but no one told me! Maybe my poor planing wasn't entirely down to my lack of skill after all. I started to read more, and soon became quite knowledgeable about frogs, soles, effective pitches, double bevels, about Bedrock and Bailey – and my interest in a better plane quickly developed into a raging itch that had to be scratched.

Upgrade or spend?

I could have taken a cheaper route and upgraded the plane I had. I'd have needed to flatten the sole, improve the seating of the frog, change the soft, thin 1970s blade for a better one (complete with new chip-breaker), and probably widen the mouth of the plane

Get the sharpening right, and you can take equally fine shavings from the end grain too

Sharpening plane blades accurately is much easier with the help of a simple honing guide

My pull-out sharpening shelf keeps the necessary kit conveniently to hand and makes sharpening a quick and easy process

A shooting board is a surprisingly easy bench aid to make, and will open up new possibilities in precision working

With the birdhouse jig you can plane mitred box corners to obtain a perfect fit and a good gluing surface

This simple little box was my first piece of seriously accurate work, and was a very satisfying achievement

to take the thicker blade. All of that is eminently possible, and if you're someone who enjoys tinkering then it's a real option.

Me? My metal work used to make my old-style woodworking look world-class – and anyway I was eager to get on with improving the latter. So I took a deep breath and splashed out some hard-earned funds on a Veritas low-angle jack plane (probably the best hand-tool purchase of my life, as it turns out).

Its superb engineering meant that I could – as one should be able to – use it straight from the box, although a little light honing didn't go amiss, and its unusual bevel-up configuration meant that I could tweak the cutting angle to handle wild grain.

Looking sharp

Honing: that was something else I'd never really mastered. Faced with a beautiful, brand new A2 plane iron, I didn't want to start off by ruining the edge. So I swallowed my pride and bought a cheap, simple honing guide – the Axminster model that's based on the old Eclipse one some might remember.

After a little more study of magazine articles, DVDs and YouTube, I found I was after all quite capable of getting a razor edge – a revelation in itself. I still remember the buzz when I first took a fine, translucent shaving from the end grain of an oak board. Until then I'd simply assumed that end-grain always produced only dust.

Better skills

This gave me a fighting chance of actually improving my planing skills – and some additional incentive to do it. The best kit in the world won't compensate for unskilled hands, but it does give them a decent prospect of learning – more on which next month.

I've never regretted buying this Veritas plane. It's become my favourite and most-used plane, whether for truing up and dimensioning timber or for final finish-planing of a completed project. However, if you feel that the admittedly high price is prohibitive there are now cheaper clones on the market such as the well-reviewed Quangsheng range. Workshop Heaven sell the bevel-up jack plane with three blades, offering a range of cutting angles for different grain characteristics.

Shooting stars

There's a kind of natural progression that sets in; one thing tends to lead to another. I'd been reading up and watching videos about planing, and had realized the value of a shooting board – something I'd never owned before, although I knew about them in theory.

A couple of well-engineered chisels perfectly complement a good dovetail saw when cutting joints

A good dovetail saw can cost serious money, but the Veritas saw in the foreground is a genuine bargain

Some jobs don't need – or deserve – high-quality tools. This cheap-as-chips hardpoint saw bought on eBay is fine for general cutting

A SURFER'S GUIDE

These websites are particularly good sources for the tools I've mentioned in this series of articles – and of course much more besides. They're all companies I deal with regularly, and are my first ports of call when I'm searching for new kit.

■ **www.axminster.co.uk**
The Axminster Tool Centre catalogue is a 600-page treasure chest, featuring among other things a basic honing guide for just £7.74.

■ **www.brimarc.com**
Brimarc sells Veritas tools, including planes, dovetail saws and much more.

■ **www.classichandtools.com**
Classic Hand Tools is an excellent source for fine and specialist tools – but beware the siren voices!

■ **www.dm-tools.co.uk**
D & M Tools is a big retailer with a huge range of stock. You need to be a bit selective as their stuff comes from a massive range of manufacturers, covering a wide spectrum from very entry-level stuff up to top professional quality.

■ **www.workshopheaven.com**
Workshop Heaven stocks Quangsheng planes and other fine tools, and is home to another choir of seductive siren voices!

On the other hand, my Stanley Steelmaster claw hammer – considered an extravagance in 1964 – has never lost its head!

I took a lot of trouble to get the fence perfectly square, and also made the board double-sided so I could use the plane on either side, thus always keeping the face edge against the fence while truing up both ends of a workpiece. This aid has proved so useful that it now lives semi-permanently at the far end of the bench, always ready for action.

Perfect mitres

I was now getting very close to turning out my first simple but seriously craftsman-like piece of work. For the inaugural projects I was planning to celebrate my new skills, I needed just one more thing – a 'birdhouse jig' to attach to the shooting board which would help me to make boxes with neatly mitred corners. That tested my new-found planing skills, as the slopes of the jig must be at precisely 45°. However, it was worth the effort, and repeatedly shooting perfect close mitres becomes a matter of routine.

With this jig, I didn't have to worry about cutting perfect mitres with the saw. The plane would true them up perfectly while also leaving good gluing surfaces.

Happy Christmas!

It worked a treat. The following Christmas, most of my family received little hand-crafted hardwood boxes with mitred corners, and filled with home-made fudge by Woman with Culinary Skills. As the presents were opened I got a real buzz from watching the recipients scrutinizing the close mitres and appreciatively running fudgy fingers over the silky surfaces.

I felt as if I'd faced down some serious woodworking demons simply by acquiring (and learning to use) a good quality plane and making the jigs. Years later, I've still got those self-same jigs and I've lost count of how many boxes they've enabled me to turn out.

Raising the bar

This experience gave me an amazing confidence hit and I started thinking about more ambitious ways of jointing boxes. Dovetails were an obvious and attractive option. I'd struggled with them in the past and, predictably, had decided that I simply wasn't gifted enough to cut them.

I'd got an old dovetail saw lying around – complete with a kink in the blade – and thought I'd have a go with it. I only got as far as cutting the first tail before despair set in once more. The cut was so wayward that I knew I'd have no chance of scribing a socket to fit. However, I was saved from abandoning all hope by a magazine article. The author, Rob Cosman, emphasized the importance of a well-set saw that can't flop around in the kerf.

Dovetails conquered

So I looked around for a high-quality saw. It was a big outlay at the time, but the good news is that Veritas have since brought out their own dovetail saw at about half the cost of comparable competitors, and I now use theirs almost exclusively.

I wish I could tell you what a transformation that new saw brought about... but I can't because it didn't, or not immediately anyway. Cutting a dovetail by hand is about more than just good kit. Like hand planing, it takes skill as well and next month I'll tell you how I set about honing my techniques. However, with both planing and dovetailing, getting the quality kit was an essential first step.

High priority

What I hope you're sensing through this article is that with just a very few good tools – whether they be expensive high-end kit that comes ready to use, or cheaper stuff that you've taken time to work on – it's possible to raise your game by several notches.

To sum up, it's about first knowing what you really want to do in the space you've got, and then considering what is truly essential to that: desirable and good-to-own can come later. For me, it was a good plane, a dovetail saw and a couple of chisels. For you it might be different, but the point is to prioritise what is really essential and has to be of high quality. That might help you to resist the charms of those seductive sirens that sing out from the pages of glossy tool catalogues, attempting to lure us onto the treacherous reefs of Unnecessary Purchase.

Next month: how I improved my skills...

BY KENNETH JONES

Need an extra hand?

When it comes to assembling things you never seem to have enough hands, especially when components have to be held at exact angles. I devised these corner holders to deal with precisely this problem

I was recently asked to make a number of wooden boxes to transport some delicate electronic equipment. The specification was quite precise, the most important point being that nothing metallic could be used in their construction.

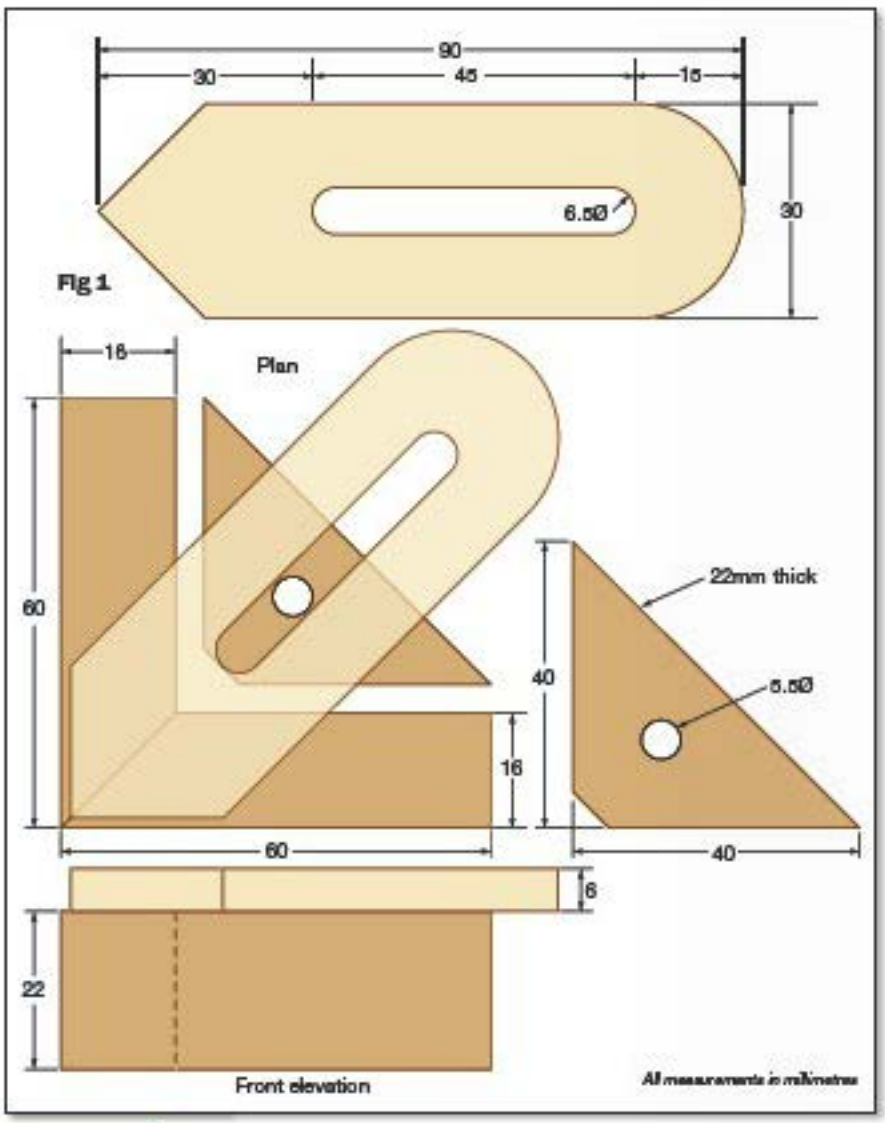
Solving a problem

The boxes were to be of various sizes, open topped and made from 9mm ply with a lipped top edge. To construct them was quite simple. I could rebate the sides to take the ends, and also drop the 4mm thick plywood bottom into a similar rebate, with everything being glued together.

The problem came in actually gluing the parts together and applying strap cramps to hold them square while the glue dried. My solution was to make a set of four corner holders, as shown in fig 1. While they don't cramp the corners tightly, they stop them falling over and keep them square while the straps are applied and tightened.

Simple squares

The first job was to prepare the materials. I made mine from some beech offcuts, photo 1, but any hardwood would do. I cut eight pieces 60mm long and 22 x 16mm in cross-section to form the L-shaped bodies



of the holders, plus four small 40 x 40mm triangles 22mm thick, photo 2. I marked one end of each 60mm piece for dovetailing and cut the joints by hand, photo 3. Then I assembled the four L shapes, checked that they were square and cleaned up the joints. I also put a small chamfer on the external corners, photo 4.

On the slide

The next stage was to make the diagonal slides from 6mm plywood. Each one was cut to 90 x 30mm, with one end brought to a 90° point as shown in fig 1. Then I marked out the 45mm long slot to accommodate the bolt and wing nut, drilled a 6.5mm diameter hole at each end and removed the waste with my scrollsaw. I radiused the other end of the slide just for appearance's sake, photo 5. Sand the slides and their slots to remove any rough edges, and give them a coat of clear sealer if you wish.

Drill and tap

The triangular sections now need drilling to accept the 30mm M6 bolts. First drill a 15mm diameter flat-bottomed hole equal in depth to the thickness of the bolt head; then drill on through its centre with a 5.5mm drill. This will allow you to tap a thread in the hole, photo 6. The bolt can now be wound in tightly. If you don't have the equipment to tap a thread, drill 6mm diameter holes and glue the bolts in place with a little epoxy resin adhesive.

Photo 7 shows the slides and triangles ready to be assembled. Glue and pin a slide to each L shape and set them aside, photo 8. Note that I've positioned the slide a couple of millimetres in from the corner of the triangle.

Assembly time

I was now ready to assemble my boxes. I cut all the parts to size, formed the required rebates on my router table and glued a solid beech lipping onto all the top edges.

I started the assembly by giving all four corner joints a coat of glue. It was then easy to hold the first corner together while I positioned the holder, slid the triangle into the internal corner and tightened down the wing nut onto its washer, photo 9. The nut doesn't need to be tight.

I then did the same with the other three corners, photo 10. Everything was now held precisely and securely in position as I attached the band cramps and slowly tightened them. I was now able to remove the corner holders, ready for use on the next box. I soon had a full set of boxes assembled and ready for delivery, thanks to my two extra pairs of hands!

I made my holders from some beech offcuts, but any straight-grained hardwood will do

Cut eight pieces to 60 x 22 x 16mm, and prepare four 40mm square triangles

Mark out and cut a single dovetail joint on the ends of the eight pieces

Assemble each dovetail joint, check that it's square and clean up the corners

Cut the 90° point, the centre slot and the radiused end on the scrollsaw

Drill 15mm and 5.5mm diameter holes in each triangle and tap a thread in the hole

You now have four slides and four drilled triangles ready for assembly

Glue and pin each slide to its triangle. Note the slight inset of the point

Fit the holder, slide the triangle up into the internal angle and tighten the wing nut

Repeat the process for the other three corners, then fit the strap cramps

BY IAN WILKIE

On the scent

This is a project which can be turned easily and quickly in any attractive wood, and when the bowl is filled with sweet-smelling potpourri it makes a very popular gift. The pewter lids complement the turning very well

I chose American black walnut (left) and ash for my potpourri bowls

Two of a variety of pewter lids available from www.turners-retreat.co.uk

Start by marking the centre of each blank. I use a centre finder on small blanks like these

Mount the blank on the screw chuck and screw it to the headstock

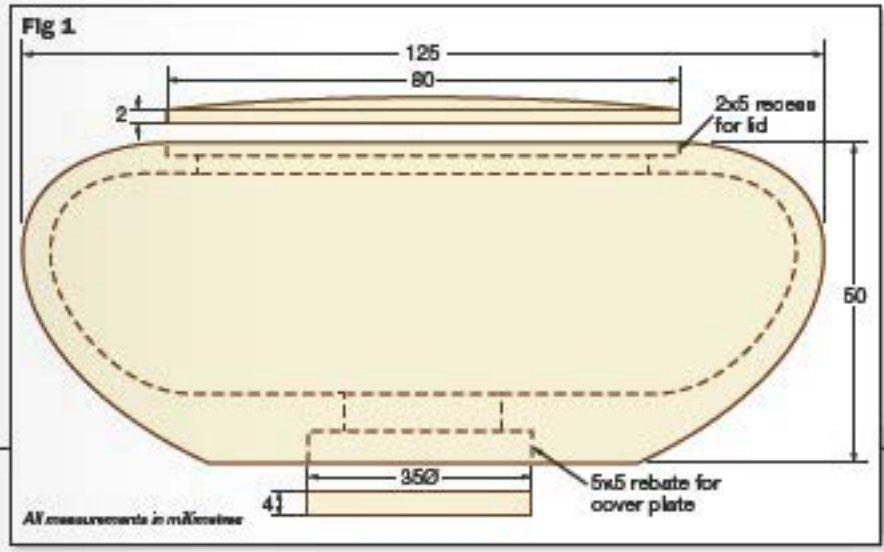
Drill a hole 36mm in diameter and 5mm deep in the face of the blank

Then drill a second centred hole 25mm in diameter and 25mm deep

This design has the lid permanently glued into the top of the bowl so the contents won't spill out. A hole in the base allows you to renew the potpourri, or to freshen it up from time to time with scented oil, and is covered by simple disc secured by four small brass screws.

I've turned two bowls for this article, one in ash and the other in American black walnut, photo 1. The 80mm diameter pewter lid inserts cost just £2. They're well made and come in a range of eight attractive designs, photo 2. I'll also show how you can make your own lid, either by drilling or fretting a wooden disc.

Fig 1



Raw materials

The blanks I used were 127mm in diameter and 60mm thick: the ash cost me £3 and the walnut £5. The wood is

Face off what will eventually become the underside of the bowl...

...and start to shape the outside body of the bowl using a bowl gouge

Support the work with a revolving centre in the tailstock to cut vibration

Measure the diameter of your insert and reverse the bowl on the lathe

Start hollowing out the inside of the bowl; aim for a depth of 40mm

Cut a shallow recess round the neck of the bowl to take the insert...

...and keep checking your progress until it fits snugly in the recess

Prepare a plywood disc to fit the access hole in the base and screw it in place

Glue the pewter lid into its recess with an epoxy resin adhesive

Unscrew the base disc, fill the bowl with potpourri and replace it

The American black walnut contrasts well with the leafy design of this lid...

...while the paler ash looks good with an open hummingbird pattern

1 Face off the blank and turn it down to a finished diameter of 80mm

2 Drill the outer row of 12 holes. I used the Robert Sorby boring kit (see below) here

3 Part off the lid to an edge thickness of 2mm and saw through the spigot

4 Clean out any whiskers from the drilled holes with rolled-up fine abrasive

5 Turn the bowl to match the lid diameter and test its fit in the recess

6 Fill the bowl with potpourri and screw the base cover plate in place

MAKING A DRILLED LID

Start with a blank 85mm in diameter and 25mm thick. Drill a chucking recess 35mm in diameter and 5mm deep in the centre with a Forstner bit. Mount the blank with the chuck jaws expanded into the recess. Face off the blank, turn it to a diameter of 80mm, photo 1, and gently dome the top surface.

Drilling the holes

To drill the symmetrical pattern of holes I used the Robert Sorby boring kit (see right), fitted with the 6mm bush and the matching lip-and-spur drill bit.

Unplug the lathe. Use an indexing system or carry out some basic geometry to position the holes. Starting 5mm in from the outer edge of the blank, drill every other hole; this will give 12 holes on most indexing systems, photo 2. Move the jig in a further 5mm to make 12 more closely spaced holes. Drill to a depth of at least 10mm. I then used a drill chuck in the tailstock to make one final centre hole.

Separating and finishing

Part off the lid with a thin parting tool to give a final edge thickness of 2mm. Then stop the lathe and cut through the remaining spigot with a fine-toothed saw, photo 3. NEVER be tempted to leave the lathe running while you do this!

Clean out any whiskers inside the holes with fine abrasive, photo 4, and sand the lid thoroughly. Then turn the bowl to suit the lid diameter, as mentioned in the main article, and check that the lid fits accurately, photo 5. Glue it in place, fill the bowl with potpourri and fit the base disc, photo 6.

Robert Sorby metric precision boring kit

This jig can be purchased with a stem diameter to suit your lathe, and comes in a neat box with 6, 9 and 12mm drill bits and bushes. It's used with an indexing system and a drill wherever holes need to be bored accurately – either for decoration, as in this project, or for other tasks such as making holes for stool legs or wheel spokes.

When setting it up, position the stem in the banjo so the drill point is exactly on the centre line height. I've had one of these systems for many years now, and it's well-made and accurate in use. The current price is £44.45, from Stiles & Bates and other Robert Sorby stockists.

well seasoned and accurately thicknessed, so it's ready to go straight onto the screw chuck without any further cutting. This is one of the reasons why I purchase my wood from Ockenden Timber (see page 60 for contact details).

Potpourri is a fragrant mixture of dried flower petals, herbs and spices. You need to bear in mind that the pewter lids have quite large piercings in their designs, and if the mixture is too fine it will come through. I chose quite large pieces of dried material for this reason.

Starting the turning

The first part of the turning is carried out on a screw chuck, so mark the centre of the blank, photo 3, and drill a hole to suit your screw chuck. Then mount the blank firmly on the chuck and screw it onto the headstock, photo 4.

Next, drill a hole to a depth of 5mm with a 35mm diameter saw-tooth Forstner bit inserted in the tailstock, photo 5. Then drill a second hole through the first with a 25mm

1 Cut out your pattern, working with a good light source and some magnification

2 I find it helpful to colour in the areas of the pattern I'm going to cut out

3 Turn the bowl recess to match the lid diameter, and check that the lid fits

4 Glue the lid in place and fill the bowl with potpourri mixture as before

MAKING A FRETTED LID

To make the fretted lid, omit the drilling stage described on page 59 and part off the lid as before. Choose your design; there are lots of free scrollsaw patterns available on various websites that you can download and print.

Glue the paper pattern to the lid with Copydex and drill all the blade entry holes with a fine drill bit. Fit a new No 3 blade in the scrollsaw and set to work with a good light source and some magnification so you can clearly see what you're doing, photo 1. I find it helpful to colour in the areas I'm going to cut out, photo 2.

Try to do the fretsawing in one session so you don't break your rhythm or lose concentration. Clean off the remains of the paper pattern and sand the lid smooth. Turn your bowl to suit the lid diameter and check that the lid fits, photo 3. Then glue it in place and fill the bowl with potpourri as before, photo 4.

bit to a depth of 25mm, photo 6. This produces the recess that will house the plywood base cover plate.

Shaping the bowl

Face off the surface, photo 7, and start to turn the outside of the bowl using a bowl gouge, photo 8. I like to use the Henry Taylor 6mm Superflute with a Kelso handle. Take gentle cuts to produce the shape shown in fig 1 on page 57. I supported the work with a revolving centre in the tailstock to prevent any vibration as the shaping progressed, photo 9.

Once you're happy with the shape, look critically at the surface in a good light to detect any turning marks. Sand the surface thoroughly, working down through the grits. If you're using sanding sealer and friction polish, apply this to the outside of the bowl while it's still on the screw chuck. If you're going to use an oil finish, this can be done later when the work is off the lathe.

Hollowing out the bowl

Measure the diameter of your insert, photo 10, which will be in the region of 80mm. Remove the bowl and the screw chuck, and replace it with a scroll chuck fitted with step-type jaws that will expand into the 35mm hole you made earlier. Reverse the bowl and mount it on the chuck jaws.

You can now start hollowing out the inside, aiming for a finished depth of about 40mm, photo 11. You can use any suitable tool in your collection. I chose my Sorby multi-tip scraper, which is a very versatile tool and easy to use. The underside of the shank has a flat surface to place on the tool rest so you know exactly where the unseen cutting tip is positioned inside the bowl.

Fitting the inserts

The pewter insert sits on a recess 2mm deep and 5mm wide cut in the top of the bowl with a parting tool, photo 12. Keep checking your progress until the lid fits snugly in the recess, photo 13. If you're applying an oil finish at this stage, take care not to get any in the recess where the adhesive is going to go.

Next, cut a 4mm plywood disc 35mm in diameter to cover the bottom access hole. Hold the wood between pressure pads and gently turn the edge until you have an exact fit in the hole. Drill four small holes around the edge and screw it into small pilot holes in the base recess. Photo 14 shows the disc being fitted to the walnut bowl.

Finish the job by gluing the pewter lid into the top recess using an epoxy resin adhesive such as Araldite, photo 15. Unscrew the base disc and fill the bowl with potpourri, photo 16. The two woods I've used for these bowls, photos 17 and 18, each with a different pewter insert, make an interesting contrast.

I've featured two possible ideas to try out if you prefer to make your own wooden lids: one is drilled and the other has a design cut out on the scrollsaw. If you decide to take this route, make the lid first and then turn the bowl to suit the lid diameter. It's much trickier to do it the other way round, and it's likely that the lid won't fit precisely.

FURTHER INFORMATION

Turners' supplies

Ockenden Timber stock a wide range of turning blanks, both exotic and home-grown. You can order by phone or online and be confident that you'll receive wood of good quality.

- 01588 620884
- www.ockenden-timber.co.uk

Turners Retreat have many accessories to interest the woodturner, and stock the pewter lids used in this article.

- 01302 744344
- www.turners-retreat.co.uk

Robert Sorby precision boring system

- www.robert-sorby.co.uk
- www.stilesandbates.co.uk

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BY COLIN SIMPSON

Let there be light

Candlesticks come in all shapes and sizes. The design for this particular candlestick is in three parts, allowing practice for both spindle and faceplate turning. The size of candle you want to use in it will dictate its overall dimensions

Possible designs for candlesticks are limitless, but two important points need to be considered. First, the candlestick needs to be stable enough so as not to be knocked over easily and second, since wood burns well and candles have a flame, it's sensible to insert a metal liner to avoid candle-to-wood contact. You can buy brass candle cups for standard candles from woodturning suppliers, but since this design is intended to take larger 'church' candles, I'm using a disc of metal sheet cut to size.

On the drawing board

For intricate designs like this one, I like to create a full size drawing. This serves two purposes. I can get the proportions and balance right with pencil and paper rather than wasting good wood and secondly, I can then use the drawing to transfer the proportions to the wood.

The wood I've used is mahogany, photo 1. The base is 190mm in diameter and the top 145mm; both are 70mm thick. The stem is made from a blank 375mm long and 75mm square.

From the bottom up

I started with the base. Cut its blank roughly to shape on the bandsaw and drill an 8mm hole in the centre of what will become the top face, photo 2. Screw the blank to a screw chuck, photo 3, ensuring that the blank sits snugly on the bottom of the screw chuck or, as in this case, that there's no gap between the

Two thick mahogany offcuts were the starting point of this project

Drill an 8mm diameter hole in the centre of the base's top surface

Twist the blank squarely onto the centre screw of your screwchuck

Make sure that there's no gap between the blank and the chuck jaws

Flatten the base using a pull cut with a swept-back bowl gouge...

...then true up the edge of the blank using the same gouge

Next, use a parting tool to cut two concentric recesses on the underside

Dovetail the smaller recess so it will fit on the four-jaw chuck

wood and the chuck jaws, photo 4.

Flatten the bottom face using a pull cut with a swept-back bowl gouge, photo 5. Then true up the edge of the blank with the same gouge, photo 6. Next, cut two recesses with a parting tool, photo 7. The larger of these will be used to house a metal weight, if I think the finished candlestick needs greater stability. The smaller one is sized for my chuck jaws. These are dovetailed, so I undercut this recess using a skew chisel, photo 8.

Changing chucks

Remove the blank from the screw chuck and mount it on your four-jaw chuck using the recess you've just cut. Now you can start shaping the outside. I used a ¾in spindle gouge to do this, and started by rolling the bead at the bottom of the base, photo 9.

Form the eccentric bead next, photo 10. Keep the gouge over on its side to prevent the wing digging into the wall of wood above it. Remove this waste wood as you go, and then cut the cove, photo 11. Finally cut the bead at the top, photo 12.

Use a 25mm Forstner or saw-toothed bit in a Jacobs chuck in the tailstock to drill a 35mm deep hole in the top of the blank to receive the 25mm tenon you'll be cutting next on the bottom end the candlestick's stem, photo 13. Now sand the piece down to 400 grit.

A spindle gouge makes short work of cutting the bead at the bottom

Cut the eccentric bead with the gouge held over on its side...

Shaping the stem

Mount the stem blank between centres and rough it down to a cylinder with a spindle roughing gouge, photo 14. Starting at the tailstock end, cut the 25mm diameter tenon with a skew chisel on its side, photo 15. A good tip here is to size just the first few millimetres to begin with so you can check the diameter with callipers, and then to cut the rest of the tenon. This way, should you make the first section too small, you have a second chance with the rest of the tenon.

Standard practice

The rest of the stem is simple spindle turning. It's good practice to work from the tailstock end towards the headstock. Use a ¾in spindle gouge to cut the first bead, photo 16, then the cove, photo 17, another bead, photo 18 and then the main teardrop shape of the stem. I went back to the spindle roughing gouge to roughly shape this part, photo 19, before finalising the shape with the ¾in spindle gouge. Finally, turn another 25mm diameter tenon at the top of the stem, photo 20. Sand the piece down to 400 grit, but don't apply a finish at this stage.

Reaching the top

The top bowl of the candlestick is made in exactly the same way as the base. Mount the

...to prevent the wing digging in. Then remove the waste wood above it

Finally complete the cove and cut the bead at the top of the base

Use a 25mm bit in the tailstock chuck to drill a 35mm deep hole

Rough the stem down to a cylinder with a spindle roughing gouge

Next, start to cut the 25mm tenon; check the diameter with callipers

Working from tailstock to headstock, start by cutting the first bead

Then form the cove above it, using the 9in spindle gouge

Shape the second bead immediately above the cove in the same way

Use a spindle roughing gouge to make the body's flowing teardrop shape

Finally cut another 25mm diameter tenon at the top end of the stem

Mount the top blank on a screwchuck and cut a shallow recess for the metal plate

Reverse the blank and start to shape the outside with a spindle gouge

Glue up and assemble the three parts, using the lathe as a cramp, and apply your chosen finish

blank on a screwchuck after drilling a hole in the underside of the top, and cut a recess for the chuck, photo 21. This recess will also house the metal plate on which the candle will sit. Reverse the piece onto your four-jaw chuck, drill the 25mm diameter hole for the tenon as shown in photo 13, and shape the outside, photo 22. Finish by sanding the piece down to 400 grit as before.

Three into one

I use the lathe as a cramping jig when assembling pieces like this. Remount the base in the four-jaw chuck, apply glue to the hole and insert the tenon on the bottom end of the stem. Glue the top to the stem in the same way and then bring up the tailstock to apply pressure to the piece while the glue dries, photo 23.

When the glue has cured, complete the piece by applying the finish of your choice. My customer wanted the candlestick a little darker than the wood's natural colour, so I applied a polyurethane gel stain, then followed this with another coat of clear polyurethane, photo 24. Finally the metal plate, cut to size and sprayed black, was glued in place with a dab of silicone mastic. The stick was very stable, and didn't need a weight in the base after all!

Spray the metal candle support plate black and glue it in place in its recess

Rotary tools are incredibly useful machines capable of tackling lots of small (and not so small) tasks. This model combines powerful cordless performance with rapid charging and Bosch quality

Bosch GRO 10.8V-Li rotary tool

£170
(see text)

It makes sense for the company with Dremel in its portfolio to make a rotary tool with a more robust build and a tried and tested battery platform to back it up. Bosch has certainly achieved that with this tool, but whereas Dremel usually pack in load of accessories to cover a range of tasks, this one comes with just a spare collet, a few cutting discs and a tapered nose cone for working the tool at shallow angles. However, it's compatible with the massive range of Dremel accessories, so there's no shortage on that front.

Standard features

The tool comes with two standard 10.8V cloverleaf style batteries, now upped in stature to 2.0Ah so the run time is extended. If you already have other tools using this battery platform, the body only is available for about £100. However, if you have the original lower-rated Ah batteries with another Bosch tool, these are still compatible.

It's an easy tool to operate, with the controls picked out in red against the blue body. The front push button is the collet lock for swapping bits, while sitting behind it is the slider for powering up the tool.

Halfway back is the stepless speed adjustment dial. This is recessed to prevent you inadvertently altering the setting as you work if you opt for body-grip operation.

Two choices

You have two options for holding the tool; round the body for basic cutting, polishing and grinding work, or in a pen style for finer work – engraving or detail piercing, for example. It's quite a chunky tool in either grip though, measuring about 170mm around the widest point of the body and narrowing marginally around the front end.

Despite it being a long tool at 250mm, it's still quite controllable and well balanced. Although it weighs just 620g with its battery, it's a quite heavy tool to hold in a pen grip for any length of time.

Summing up

This is the sort of tool for which the 10.8V battery platform is ideal. In this particular instance, if you want the diversity of the Dremel tools and the accessories it takes, but with a higher build quality and an extended run time, Bosch has come up with the goods here, and with other handy tools on the same battery platform it fills a niche pretty well. ***AK***

The supplied accessories are somewhat meagre – just a mandrel and five cutting discs

It's a smooth-running controllable tool. Note the small built in work light

The Dremel flexible shaft is compatible with the tool for additional diversity

The Dremel pen grip fits, but the nose cone barely has enough thread to retain it

SPECIFICATION

BATTERY	10.8V 2.0Ah Li-Ion
VARIABLE SPEED	5,000-35,000rpm
CHUCK	3.2mm
COLLET SUPPLIED	3.2mm
WEIGHT	620g with battery

ACCESSORIES two batteries, charger, mandrel, five cutting discs, L-BOXX case

VERDICT

This is a rotary tool designed for heavy-duty professional use.

PROS
- Compatible with other Bosch 10.8V tools
- Takes Dremel accessories
- LED worklight and battery charge indicator

CONS
- Minimal accessories supplied
- Quite heavy after prolonged use in pen-grip mode

VALUE FOR MONEY

PERFORMANCE

FURTHER INFORMATION

- Bosch
- 01895 838743
- www.boschpowertools.co.uk

You can never have too many routers. They're such useful tools, and if you could buy two for the price of one, you would. This is what you get with this Draper kit – one motor, two bases and all the accessories you could want

Draper MR1350K combination router kit

As any woodworker will tell you, routers are one of the most popular and versatile of all workshop power tools. In fact, many serious woodworkers have several, enabling them for example to keep one permanently table-mounted and another for hand-held use. But there is another alternative: buy a router with two bases. The advantage of this design is that it effectively gives you two routers for the price of one.

Fixed or plunge?

This Draper router is supplied with the familiar plunging base complete with fine height adjuster, and also with a fixed base. Fixed-base routers have always been popular in the USA, but in the UK the plunge design is more common. While plunging routers are undoubtedly more versatile than the fixed-base designs, both types have their strengths.

Though the fixed-base router obviously cannot undertake plunging jobs, such as mortising, its light weight and low centre of gravity mean that it is excellent for edge moulding and template work. The cutting depth is easy to set, and because there are no plunge springs, there is less danger of it moving out of adjustment. The fixed-base machine also makes an ideal table-mounted router, as again the absence of plunge springs make it easier to adjust when it's inverted.

Common features

The soft-start motor is a 1350W unit with a toggle switch and variable speed control. It has a solid alloy body and there's a spindle lock button for making cutter changes. On the base of the motor there are three bright LED lights that shine directly down onto the workpiece. These are illuminated whenever the router is connected to the mains supply.

Changing bases

For this sort of router to be effective, it must be easy to change bases. Luckily the Draper is well designed and the bases can be swapped in a few seconds. The motor has a smooth alloy body with a rack down one side which meshes with a pinion wheel in the fixed base, making it very easy to set the cutter depth precisely. The rack isn't used in the plunge base; the motor body just slides in and is then clamped in place. The plunge base is fitted with a standard depth-of-cut setting with an integrated fine adjuster. Both bases have clear acrylic chippings shields and are also supplied with removable dust extraction adapters.

This router comes with an extremely comprehensive set of accessories

The motor has a smooth body and takes just seconds to fit into either base

This large knob on the fixed base makes it easy to set the depth of cut precisely

The fixed base configuration is ideal for jobs such as routing edge profiles

Accessory bonanza

This router kit includes a remarkably comprehensive set of parts and accessories. There is a parallel side fence, a pair of dust extraction adapters, a pair of chippings shields, a set of guide bushes, an edge follower, a centring pin, a trammel pin and a spanner. So you have virtually everything you could possibly need to get going, apart from some cutters. Everything is neatly packed into a handy carry case.

The side fence is a simple pressed steel design and has long connecting rails. It can be used to rout circles using the supplied centre pin, and there is also a small roller attachment for following curved or uneven edges.

Both the bases are fitted with transparent plastic baseplates, and the guide bushes screw directly into these without the need for tools. A centring pin is supplied so that you can adjust the baseplate to ensure total accuracy.

Using the router

The Draper is a satisfying machine to use. It's comfortable and efficient in both configurations. The fixed base is simple to fit and easy to adjust. The low handle position makes it stable and controllable. The plunge base slides on in seconds and has a smooth plunging action, coupled with an efficient plunge lock and accurate depth-setting adjustment. The work light is excellent and should be mandatory on all routers. The only criticism is that the aperture in the baseplates is a little on the small side, making it difficult to fit modestly large cutters.

Summing up

This is a carefully designed and well made tool. It's both versatile and a pleasure to use. It might benefit from having a little more power, but most users will find it more than adequate. It's supplied with a full range of accessories, so all you need to get is a set of cutters. Overall it's an impressive machine at an attractive price. ***AS***

SPECIFICATION

MOTOR		1350W
NO-LOAD SPEED		12,000-25,000rpm
COLLETS SUPPLIED		¼in and ⅛in
PLUNGE STROKE	with dust extraction	0-55mm
	without extraction	0-45mm
WEIGHT	fixed base	3.6kg
	plunge base	4.3kg
ACCESSORIES	see text	

VERDICT

This is an impressive tool that represents excellent value for money.

PROS
- Versatile
- Easy to use
- Good build quality

CONS
- A little underpowered
- Small baseplate aperture

VALUE FOR MONEY

PERFORMANCE

FURTHER INFORMATION

- Draper
- 02380 494333
- www.draper.co.uk

The plunge base and parallel fence guide are very versatile

The chosen setting depth is retained by closing this locking lever

The kit includes clear chip protectors for both fixed and plunge bases

Three guide bushes are supplied, and fit into the baseplate aperture

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If you can use a hand-held drill to bore holes at precisely 90° to the surface, you've obviously got excellent hand-eye coordination. For the rest of us, a drill stand is an essential accessory

Axminster DS2 drill stand

£52.94

A drill stand will often be the first choice for many woodworkers before a more expensive, dedicated bench drill is purchased. After all, most people seem to have an electric drill!

This is a heavy-duty stand made in Taiwan which is designed to hold drills with a 43mm collar. It's constructed with a heavy cast iron base, a 37mm diameter plated steel column and a die-cast aluminium head. Its overall height is 550mm and the distance between the centre line and the pillar is 130mm. The base plate has four diagonal slots that enable the user to clamp a machine vice to the table using 10mm bolts. This is a worthwhile feature that will greatly improve the drill stand's versatility and accuracy.

Standard features

The drill is held securely in the stand's jaws by its collar. The depth stop is locked in position with an Allen key. The effective stroke measurement is shown on a calibrated ring, and extends up to 68mm. The rack-and-pinion mechanism is activated by lowering and raising the side lever. If there is any side play it can be taken up with the adjusting screw on the side of the head. The stand will also hold a Trend T4 router, which has a 43mm collar.

Using the stand

Everything about this stand functioned well on test. The rack-and-pinion mechanism was smooth and the depth stop effective, allowing the user to drill accurately without any problems. Remember that power drills are quite noisy; wearing ear defenders is recommended when you're drilling for any length of time.

There are two neat features that are worth a mention. The first is the strong clip on the top of the column which keeps the flex neatly out of the way while you work. The second is the plastic see-through guard which just clips in position and can be flipped up and down easily.

To sum up; if you already have a mains drill, it's well worth considering this stand because it's a cost-effective way of drilling holes accurately. This model should give many years of service. *IW*

The stand is designed to take drills with a standard 43mm collar

The stroke measurement (up to 68mm) is shown on a calibrated ring

The depth stop is locked in position using a supplied Allen key

The stand can take a Trend T4 router, which also has a 43mm collar

SPECIFICATION

OVERALL HEIGHT	550mm
BASE	200 x 300mm
COLUMN	37mm diameter
YOKE	standard 43mm collar
HEAD TRAVEL	68mm

VERDICT

This drill stand is functional, well built and robust.

PROS
- Easy to set up and adjust
- Stable and solid in use
- Can be fitted with a machine vice

CONS
- Only fits drills with a 43mm collar

VALUE FOR MONEY

PERFORMANCE

FURTHER INFORMATION

- Axminster Tool Centre
- 03332 406406
- www.axminster.co.uk

Record Power machines have been a stalwart of many a workshop up and down the country over the years. If you're on the hunt for a well specified bandsaw at a modest price, they have a potentially suitable model in the BS400

Record BS400 bandsaw

Sitting just below the company's Startrite series of saws, this is the premium model in the Record range and boasts an excellent set of specifications and capacities. While Startrite is perceived as a trade and professional brand, this one from its stablemate will certainly sit in a small trade shop comfortably if it's treated with respect.

Fence quality

The Startrite pedigree is evident with the beefy fence; it features a large cast shoe running on a solid steel bar with a deep aluminium extrusion for the fence itself.

The fence can slide off to the left easily to gain full throat access, as well as the running bar remaining on position to allow blade swaps through the front-facing table slit. This is a plus point if you regularly swap blades, especially as some tables with side slots can prove tricky when trying to twist a blade into the guides.

Reliable guides

The blade support system is good and solid, with disc bearings for the side support as well as the thrust on the upper ones, and disc side bearings and a roller bearing to support the thrust on the lower guides.

Threads on the upper side guides allow the discs to be nipped up closely to the blade, and it pays to make sure that the locking collars for these are tightened off sufficiently, as I found they worked loose when making my initial cuts.

The lower guides require a hex wrench to bring them into position – something that has always struck me as odd on any bandsaw, as space is often restricted for making fine adjustments. To Record's credit though, the accessibility is pretty good for these, so I was able to make accurate adjustments without too much difficulty.

The quality of the guides is backed up by a heavy guide post to support the upper guides, complete with steel rack-and-pinion adjustment, and this runs with a silky smooth action via the side handwheel.

Generous table

That rack-and-pinion theme is continued beneath the table, with a pair of stout trunnions setting table tilts as required. The large winding knob gives good purchase for fine adjustment, and is locked with a Bristol lever.

The lower guides are adjusted with a hex wrench, but there's decent access

Upper guides are micro-adjusted and nipped up with the large locking wheel

A tensioning lever on the upper cabinet allows faster blade swaps

Running deep stock such as this through the blade is impressively easy

On top of the table you have two T slots. These are not the 19 x 10mm size that allows aftermarket upgrade mitre fences to be used, but the saw comes with its own good-quality mitre fence that fits the slots snugly, giving favourable results when used.

A pressed steel table extension fills the void between the table and the throat to give full support for the fence on wider cuts.

Tension and speed

As with many models nowadays, fast tensioning is achieved with a rear lever, with initial tensioning and fine tuning made with the wheel beneath the upper band wheel.

A look inside the upper band wheel cabinet reveals a very solid looking tensioning spring to cope with the 25mm maximum blade width, and there's a viewing window in the cabinet door to see the tension indicator; a simple but useful safety feature prior to powering up.

The tension spring is certainly far better than some seen on saws of similar specifications, and backs up the feeling that this saw will stand the test of time if looked after and treated with respect.

If you work a variety of materials the two speeds will appeal, and adjustment is easy enough, a winding handle releasing the belt tension to switch it to the second drive position on the lower wheel.

Using the saw

I always like to try and make a few veneer-type cuts somewhere near the maximum capacity to check both the power of the saw and also to see if there's a tendency to drift. With some 225mm wide redwood to hand, a few cuts 3mm thick were sliced off with no problem. A ripping post would be a useful addition, though.

Cutting a few curves and straight cuts at less demanding dimensions were both a cinch, but this was to be expected after the deep veneer cuts. This saw has a heavy-duty build quality and is capable enough of making consistent deep ripping cuts as well as more mundane tasks. ***AK***

SPECIFICATION

MOTOR	1500W
TABLE SIZE	535 x 480mm
TABLE TILT	-10° to 45°
BLADE LENGTH	3378mm
BLADE WIDTHS	6 to25mm
CUTTING SPEEDS	420 or 820m/min
THROAT DEPTH	416mm
MAX DEPTH OF CUT	305mm
EXTRACT OUTLET	100mm
WEIGHT	140kg

ACCESSORIES wheel kit (£59.99)

VERDICT

This is a saw from the top end of the Record range that impresses on both build quality and ability.

PROS
- Good blade guides
- Decent blade supplied
- Five-year warranty

CONS
- Awkward access to lower guides

VALUE FOR MONEY ■■■■■□

PERFORMANCE ■■■■■□

FURTHER INFORMATION

- Record Power
- 01246 561520
- www.recordpower.co.uk

This powerful and smooth-running saw makes basic curved cuts a cinch

Initial tensioning is achieved by rotating this bottom handwheel

The fence is solid, square, and runs very smoothly across the table

A twin trunnion supports the table and can be fine-adjusted with this knob

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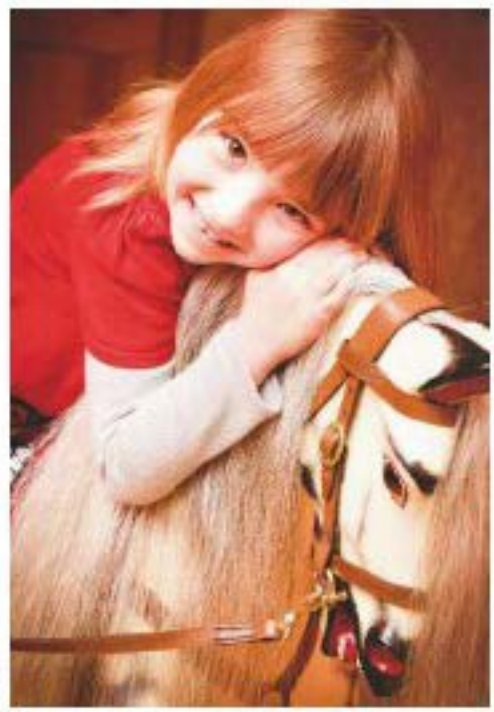

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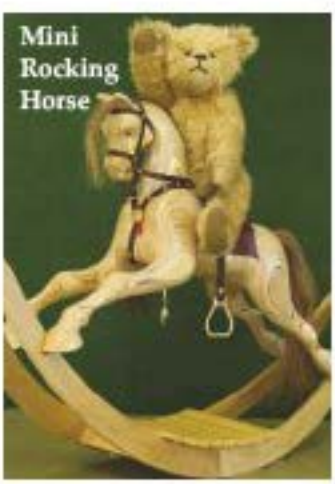

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They say that the simplest things are often the best, and this latest addition to the Festool Systainer system tops the lot. I just wish I'd thought of it...

Festool Systainer SYS-MFt

£49.99

There are some jobs you go to where the aggro of carting a Workmate up three flights of stairs far outweighs its potential usefulness. In these situations you need something a bit smaller and more portable, but still robust enough to provide an ad hoc work surface. After years of sliding mdf boards and timber battens off a variety of unstable and slippery plastic power tool carry cases, the recent announcement by Swabian specialists Festool heralding the launch of their latest Systainer case had me sitting bolt upright and paying full attention.

System addict

For anyone who doesn't know, Festool – massive proponents of the 'system' philosophy – have long packaged their kit in these stackable rigid plastic boxes, and now own the company which makes them. A clever yet simple bit of design enables the user to clip them altogether to form an impressive and grey Festool wall, a bit like a giant Lego mountain.

Most tradies, myself included, have a few Systainers among their kit, and it's long been a dream of mine to see this versatile container adopted by the other power tool manufacturers as an industry standard. Sadly this utopian vision was doomed to fall at the first hurdle with the release of Bosch's L-Boxx Sortimo system. But it takes more than a giant German marketing decision to keep a good dream down, and I'm pleased to be able to reassure any like-minded fans of conformity out there that all is not lost. Makita have recently started shipping their kit in a Systainer-compatible case of their own (the MakPac), and I'm hopeful that others will follow suit.

Perfect benchwork

While you can just about get by on site with a circular saw carry case for a workbench, the Systainer SYS-MFT takes things into a different league. The work surface is an engineered piece of high-grade mdf with various cutouts and profiles machined into it. These include a deep V groove to hold small section materials, a soft rubber inlaid strip to stop things sliding away, a slot at each end to take a Festool F-cramp, and my favourite – holes the same size as Workmate pegs for general convenience.

Stacked and seated

All in all it's a terrifically simple invention which offers additional storage within (you can 'post' small items through the hand-hold slot to save opening the lid). As part of a small Systainer stack, it's easily strong enough to stand on in the form of a site hop-up. Finally, and this won't come as a surprise, it certainly takes some beating as a tea break seat or table. MC

This really is a mobile workbench, with all of its obvious benefits

The workpiece can be securely held with the help of a custom F-cramp

SPECIFICATION

SIZE	396 x 296 x 105mm
WEIGHT	2kg

VERDICT

This is simple but effective – a really useful addition to a travelling tool kit.

PROS
- Fully compatible with other Systainer cases
- Clever workpiece holding

CONS
- None

VALUE FOR MONEY ■■■■■□

PERFORMANCE ■■■■■■

FURTHER INFORMATION
- TTS Tooltechnic Systems
- 01284 760791
- www.festool.co.uk

Brushless is the latest buzzword in the power tool industry, especially on the battery tool platform. Facts and figures abound about increased run times and additional power – no bad thing for the end user

DeWalt DCD995 combi drill

Compare this new drill to its DeWalt DCD985 brushed counterpart, and you'll notice that it's smaller and lighter, but retains identical drilling capacities of 50mm in timber, 16mm in masonry and 13mm in steel. This may be down to the fact that the DCD995 has a single collar to swap between hammer, drilling and torque setting functions, rather than a more user-friendly dual collar to over-ride the torque collar.

£340

Torque talk

I've always thought the torque function excessive, with some drills offering as many as 16 positions. This drill offers a more realistic 11 torque settings alongside the drill and impact positions. The torque setting is electronically controlled, with circuitry between the trigger, motor and gears monitoring and maintaining the correct torque under load. The result is different to the usual clicking, ratcheting noise you normally experience once the torque is reached. The DeWalt has a soft pulsing action as it engages, cutting out once the torque setting is hit.

Overload protection

This same electronic control prevents you from damaging the drill or battery from overloading. If the drill is struggling from poor speed selection for the size of hole being drilled, or a bit jams, it will simply shut the drill down to protect it before resetting itself after a few seconds, rather than continuing to draw power from the battery which can damage it or the drill.

Trigger happy

If you rely on trigger control more than torque, the trigger is indeed very good on this drill, allowing the chuck to rotate by a miniscule amount if needed, as well as retaining full control as you squeeze it fully.

There's also a very convenient single-point LED set into the base of the handle just above the battery, firing a beam directly in front of the chuck. It's trigger-actuated, with a featherlight touch enough to spark it up so you can gain light without the chuck moving. This is handy for initial positioning, especially as the light remains on for 20 seconds after the trigger is released.

Getting a grip

It's still a bit of a beast to hold when you've become accustomed to some of the lighter models on the market, but the outer alloy front casing as well as the all-metal chuck give a reassuring feel when you first handle it.

This chunky top slider allows you to select one of three gearbox speed ranges

The drill features only 11 torque settings – enough for most purposes

The LED light stays on after a touch of the trigger to aid positioning

In a concrete lintel the drill performed as well as a mains model

The drill has a three-speed full metal gearbox as well, and with a top speed of 2000rpm I found it very efficient for typical day-to-day work such as drilling standard wallplug holes, with very little vibration transfer.

I then hammer-drilled 8mm holes into a standard 7Nm block to a depth of over 100mm at a speed easily comparable to a mains model, and almost as efficiently as an SDS machine. A further test into a concrete lintel above a window proved well within its remit.

Working with wood

I guess for the chippy it's the wood dimension that's more important, and the 50mm diameter drilling capacity should be more than enough to cope with the usual drilling out of locks, stair newel post tenons and the like.

The lowest speed setting is needed for the largest diameter holes, and as the drill generates higher torque rate at lower speeds it's wise to fit the supplied side handle to keep your wrists intact!

If you feel the need for speed, I gave the drill a blast in the middle gear on 32mm holes, and it made them through without a qualm, so you aren't restricted by the lower speed for some bigger-diameter work. I also gave it a go on top speed as well and it still worked like a charm.

For me, the DCD995 is still a bit on the heavy side for everyday screwdriving work though, but keep it alongside an impact driver and you'll have a very powerful set-up for drilling and driving.

Summing up

As part of the DeWalt transition to the Li-Ion system, this new drill offers the end user a choice of this brushless one or the similarly specified DCD965 brushed version. It gives you that extra runtime and durability along with a lighter weight and slightly shorter body if you need it, but at a higher price. I'm not sure whether the extra runtime is an issue, however; these 4.0Ah batteries seem to go on forever when it comes to day-to-day drilling and driving work! *AK*

SPECIFICATION

BATTERY		18V 4.0Ah
NO-LOAD SPEEDS		0-450/1300/2000rpm
IMPACT RATE		0-7650/22,100/34,000bpm
CHUCK CAPACITY		1.5-13mm
MAX TORQUE		80Nm
MAX DRILLING CAPACITY	wood	50mm
	metal	13mm
	masonry	16mm
WEIGHT		2.13kg

VERDICT

If you're after a brushless heavy-duty drill, DeWalt hits the mark with this latest high-end offering.

PROS
- Brushless motor
- High power
- Three speeds
- All-metal gears

CONS
- Quite heavy
- No separate collar for drill override

VALUE FOR MONEY ■■■■■■
PERFORMANCE ■■■■■■

FURTHER INFORMATION

- DeWalt
- 0700 339258
- www.dewalt.co.uk

It was equally at home driving screws, but is a little heavy for extended use

The supplied side handle is a must when drilling bigger holes to prevent injury

The battery pack has a useful set of LED power status indicators

Even on the highest speed the drill fired 32mm holes into beech with ease

The Veritas high-quality hand plane march continues unabated! This time around it's a very specialised one that's unlikely to make its way into too many workshops or toolkits

Veritas cabinetmaker's trimming plane

£169.94

This plane is a close cousin of the original Stanley No 97 cabinetmaker's edge plane, but of course it's had the Veritas treatment to give it a new slant on the original design.

The biggest change is a foreshortening of the body. The original Stanley version was a full 250mm long, while Veritas have taken it down to just 165mm so it's a more controllable block plane size. The iron sits bevel up and beds at 15° with a 20° grind bevel for a shallow attack angle to the work.

A different technique

With no toe in front of the iron, it isn't really operated like a plane if it's used on an open flat surface. You don't push it through in a fluid stroke like you normally would with a bench or block plane.

There's no need for a projection below the sole either; it will work with the cutter sitting flush to the base. To make a cut on flat stock – cleaning a plug back or flushing an inlay to the surface, for example – it's more of a skewed slicing action, almost peeling the work away rather than planing it.

However, it does also double up as a plane that's ideal for blind cuts – cleaning up into a corner, for example. Here it works in a traditional manner, pushing along to ease the waste away, acting primarily as a trimming plane to give a final flush fit between intersecting components where a standard plane can't gain access, rather than running an entire shaving from a rebate.

A different blade

The lapped steel blade has a profile similar to that of a shoulder plane or carriage plane, but with a bevel at the edges as well as on the cutting face to give a crisp finish into corners such as rebates. It's hardened to Rc 58-60.

The Veritas iron (and its retention within the

SPECIFICATION

LENGTH	165mm
BLADE WIDTH	44mm
BLADE BEVEL	20°
BED ANGLE	15°
CUTTING ANGLE	35°
WEIGHT	544g

VERDICT

This plane does its job superbly, but is really a tool for Veritas completists only.

PROS
- High quality
- Great ergonomics
- Easy to set up

CONS
- A specialist tool, so limited in its use

VALUE FOR MONEY

PERFORMANCE

FURTHER INFORMATION

- Brimarc
- 03332 406967
- www.brimarc.com

The four small set screws keep the blade precisely parallel to the sole

The double-bevelled blade is ready lapped in the usual Veritas style

Adjustments are precise and easy to make by turning this brass knob

The plane can work into tight corners on work that has already been assembled

The many and varied miniature tools from Veritas can be seen as quirky talking points, but they're nonetheless built to very high standards and are designed to work as well as full-sized tools

casting) has a distinct advantage over the original Stanley, and indeed the Lie Nielsen version of it. Veritas has once again utilised small grub screws (four on this plane, two on each side) to retain the setting, and with the blade just a touch wider than the sole, these allow to blade to be positioned very accurately to clean a perfect corner.

Hone with care

With no lateral adjustment available, you do have to ensure that the honing is accurate or it can prove tricky to set the cut perfectly parallel to the sole. If you hone freehand, you'll need to take a little more care to ensure it remains true. With a relatively short usable blade length, it may well be prudent to use a jig on it anyway to minimise the need for future regrinds.

Summing up

Despite this plane's undoubted high quality and usual attention to detail, it's still a very specialised tool. That's probably why Stanley, the innovators of so many planes, dropped it from their catalogue some decades back as there are other tools that can do its job. However, it does work extremely well, so the decision to buy it – as is the case with many specialised tools – will depend on your own requirements… and the state of your bank balance! *AK*

The usable blade length is limited, but the tool isn't likely to see a great deal of use!

Lipping work is best trimmed flush with a slicing skewed action of the plane

Veritas miniature spokeshave

£40.94

If Snow White and the seven dwarves were real, the dwarves would have given up mining and taken up wood-working full-time, such is the quality of the ever expanding range of Veritas miniature tools! The latest arrival is a spokeshave, a fully functional model that's a third of the size of its regular counterpart.

Setting up

There's no adjuster for blade projection. You simply advance the blade by pushing or pulling it to set the cutting depth, and lock it with the lever cap.

To hone the blade you have to remove the lever cap by unscrewing it from the cast stainless steel body, and with only 4mm of projection in total, honing is best kept to the grind bevel rather than creating a secondary one to avoid going past the point of no return. If you ever need one, a replacement blade costs £7.14.

Using the tool

Despite its diminutive size, this little tool is actually very easy to use, and on very fine work it really does prove its worth. It's the perfect shaping tool for the modelmaker or the miniaturist.

Although it's a flat-bottomed tool it also copes well with concave work, as there's such a small contact surface with the wood. In summary, with a solid cast stainless steel body and softly rounded bubinga handles, backed up by the A2 steel blade, it's perfection in miniature. *AK*

Features such as arrises and small chamfers are easily worked with this miniature tool

It's also ideal for rounding stock to make dowels and the like

SPECIFICATION

LENGTH	89mm
BLADE	19 x 1.6mm
BLADE BED ANGLE	45°
WEIGHT	25g

ACCESSORIES leatherette storage box

VERDICT

This is a tool that's built to work, and work it does!

PROS
- Superb quality
- Great for fine shaping cuts
- Blade hardened to Rc 60-62

CONS
- Usable cutting length is minimal

VALUE FOR MONEY

PERFORMANCE

FURTHER INFORMATION

- Brimarc
- 03332 406967
- www.brimarc.com

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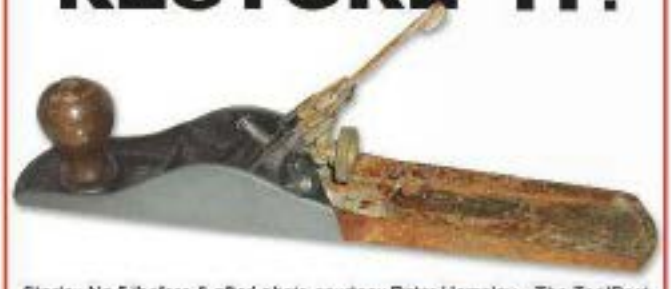

Stanley No.5 'before & after' photo courtesy Peter Hemsley – The ToolPost

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A bit of a mystery

BY MARK CASS

Collectors of woodworking tools will know that their particular field of interest continues to provide almost limitless scope for variation and oddity. There are many antique tools which seem to defy all sense of purpose to our modern minds, yet they were designed and made in their day to fulfil a specific function or task, the origins of which are now sadly lost in time.

If it's not broken...

The brace and bit has been around since ancient Egyptian times, and has been a worldwide staple of the woodworker's kit for centuries. It's not quite as popular nowadays, but there's still the occasional use for one – if only for a bit of physical exercise! – and most workshops and sheds probably have the component parts tucked away in a drawer or the back of a cupboard.

A bit of a challenge

I had occasion to reach for mine the other day following a communication from a Mr M Cobb of Ramsgate, a reader and fellow woodworker who is the owner of the brace of bits pictured here. He sent the augers in to the *Woodworker* offices in the hope that we could explain the origins, intentions and likely use of this arcane kit.

I've never seen their like before, and no one I've showed them to has either. So we're firmly in the world of mystery and speculation, and if anyone out there can shed any light on the matter it would be great to hear from you. In the meantime you can have a bit of a chuckle at my blundering hypotheses.

Words and pictures

So to accompany the photos, here's a bit more description. The one with the open curved wings is 260 mm long, while the one with the closed or pierced tip measures 235mm. The tangs are similar but not identical. One has a custom groove on one side and a sawn cross mark on the other. The lead-in screw of the open wing has a finer thread, and the shank is marked with the name J Woodcock, plus the initials G&M and the date 1879. The closed tip bears the name W Morris & Sons, but no date.

Brace yourself

My experiments showed that there's not a huge difference between using either of the mystery bits and a regular tipped auger, although amusingly the latter – though passably sharp – gave the worst results, admittedly in some coarsely grained softwood. The open-tipped bit performed the best. As an aside, it was interesting to recall the effort involved in using a brace, and the satisfactory speed with which a hole could be bored without motorised assistance.

The closed tip (right) and open wings (centre), compared to a regular modern auger bit (left)

The size and shape of the tangs suggest that these two bits had different manufacturers

The open wings produced the cleanest holes (centre). The modern auger's were the roughest!

Evolving answers

So, what's it all about? I wish I could give the definitive answer.

My first theory is that the bits were made and sold as a genuine commercial alternative to the standard lip-tipped model, and failed to catch on in a big way. My alternative theory, influenced by the work of Charles Darwin, is that by rounding over – and eventually closing – the wings, any problems with tips snapping off in difficult timber would be reduced and finally removed.

Get in touch

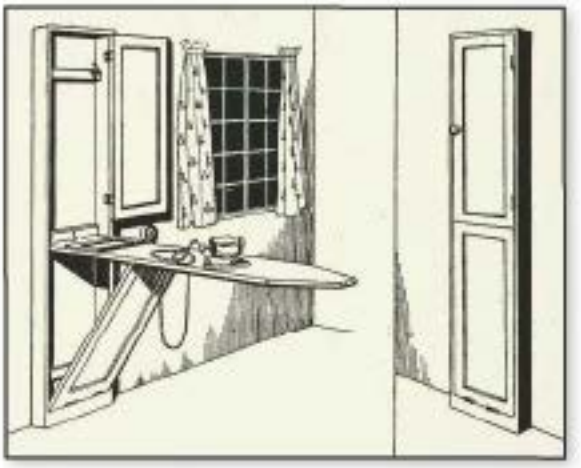
Obviously we'd all like to know just what the real answer is, and I for one won't stop until I feel I have the definitive reason for these curious augers. If any reader knows what's what, or just has a good idea concerning the tip design, please don't hesitate to get in touch with me here and put us all out of our misery!

Built-in pleasure

With available space in the home rapidly decreasing, this could be the time to re-evaluate some clever design work first presented in *The Woodworker* from April 1936. Read on...

The IRONING BOARD AS A WALL FITMENT

It's possible that I'm in a smallish minority of men who actually enjoy ironing – and we're not talking the extreme version here – but, whether you like it or not, the fact remains that an ironing board is a necessary piece of furniture and one which will be found in nearly every house and flat in the land.

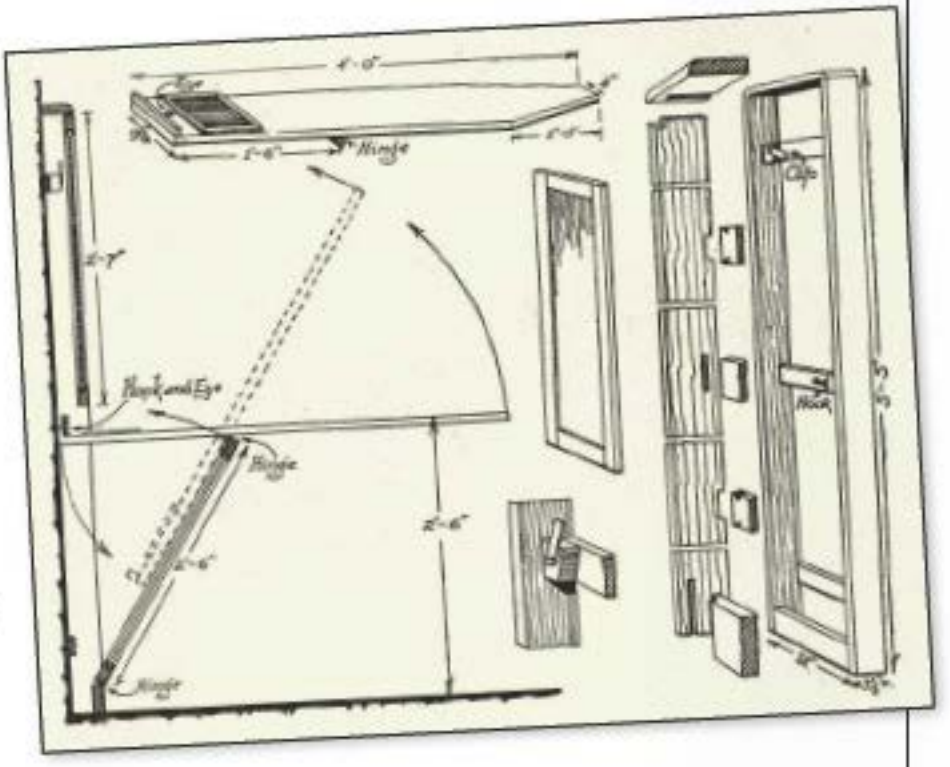


Saving space

Having made my own ironing board in recent years (it was featured in the February 2010 issue of the magazine), I can recommend it as one of those projects that continues to deliver both service and pleasure. However, the compact unit shown here really is a triumph of clever space-saving design. One occasionally comes across them in real life; I recall a terrific specimen in a Deco mansion flat as part of a massive fitted kitchen. Sadly it was observed through a post-party hangover haze, so my recall is a little on the sketchy side.

Building one in

Although the example shown here is presented as a wall fitment comprising a tall, shallow cabinet, it's plain to see that it's taking up hardly any room at all. To incorporate something similar into a kitchen or bedroom fit-out would likely present little of a problem to the average competent woodworker (which is a pretty fair description of you the reader, I would guess).



A small variation

As a working scheme I can find little wrong with this one. My only suggestion for improvement would be the omission of the heat-resistant pad (made of asbestos back then); modern irons no longer require heat insulation when they're stood upright.

While it's possible to purchase a manufactured contemporary equivalent of this fitment, the board itself is smaller and possesses little of the charm of its timber equivalent. Imagine the pleasure of demonstrating this one – especially the swing-out action – to a new lady friend! She would probably gasp in admiration and possibly even swoon with joy. I think it's time to start making...

Mark

More from The Woodworker archive next month...

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