

BAILEY'S ROUTER CLASS

Plinth with dovetailed drawer



Anthony Bailey makes a stand for a dolls house

THE PROJECT

One thing we haven't looked at yet is how to make dovetailed joints. Whereas the mortise and tenon defines the joiner, dovetails are the province of the cabinetmaker, but creating them is not so easy because of the skill and time involved. There are ready made dovetail jigs on market but they cost money and how often would they get used? So, I set to work to find a cheaper, homemade method that would suit the occasional use. In fact, I turned to my finger-jointing jig which I used to make a tea caddy in issue 46. I adapted this and, for once, that unused dovetail cutter that turns up in any starter set of cutters came in handy. I'm sure this method isn't new, but the main thing is it works. By coincidence, the editor of our sister magazine had a dolls house by Aninna Gunter (pictured, right) in need of a base to show it off properly, with a drawer underneath - a job for me then!



The unpainted plinth without the drawer furniture



PHOTOGRAPHS BY GMC/ANTHONY BAILEY

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The router is still the most versatile power tool there is. Along with a vast range of cutters, jigs and gadgets - many of which you can also make for yourself - it can help produce high-quality woodwork.

This series is intended to show you what the router can do, while assuming the reader has a general level of woodworking knowledge. We hope to show you the aspects of each project that specifically involve the router and how this great bit of kit can expand your woodworking skills.

Each month we highlight the jigs, cutters and gadgets you need to get more from this incredible machine. Feel free to send us pictures of your routing endeavours, or post them on the WPP forum at: www.woodworkersinstitute.com

THE JIG



1

This is the same as the one shown in issue 46 intended for finger-jointing. The only difference is a mitre protractor that slides in the top. You can always use it for finger-jointing if you have the original fence as shown here



3

You need to make up an inverted 'U'-shape mini table, the size isn't critical but take account of the unplunged router height. Cut out all the components with good square edges for gluing. Glue them all together to form the 'U'-shape, all clamped up square and you should end up with a strong table unit

Drill holes to mount the router in the table dead centre. Fit the router with a straight cutter attached and plunge up through the table top. It can now be replaced with your chosen dovetail cutter, which isn't intended for the previous plunging operation



5



6

The mitre protractor has a bar that runs in the table slot. It should be a good fit and slide smoothly. It needs to be slightly thinner than the slot depth



2

A vision hole is needed at the front so you can see the cutter setting. This needs to be done before assembly using an inboard trammel



4

A slot is machined in the top using a 19mm straight cutter which the mitre protractor will run in. It needs to be placed slightly to the side of the middle, where the router cutter will project through. Use a straight fence to run off the edge taking care not to let the router wander off course. The slot stops level with the intended cutter opening



7

Use a trammel to machine the curved protractor shape and the curved slot for the bolt. Both bolts are a tight, "threaded fit" in the bar and are countersunk in, carefully. Glue and screw the front board on, avoiding any screws in the path of the dovetail cutter. The rotation bolt has a captive nut to hold the protractor on and a wingnut on the bolt in the slot so you can adjust the angle easily

THE CUTTERS



From left to right: the 6.4mm straight cutter is used with an inboard trammel to make the hole in the finger jointing table front and for drilling holes in the carcass that the doll house sits on. The 19mm straight cutter is used to create the protractor slot; the 12.7mm straight cutter creates a hole for the dovetail cutter in the table top. The dovetail cutter is a standard one found in any set. Lastly, the carcass pads are bevelled with a bearing-guided bevel cutter which can be on a 1/2in shank, although I used a 3/8in shank version



MAKING IT



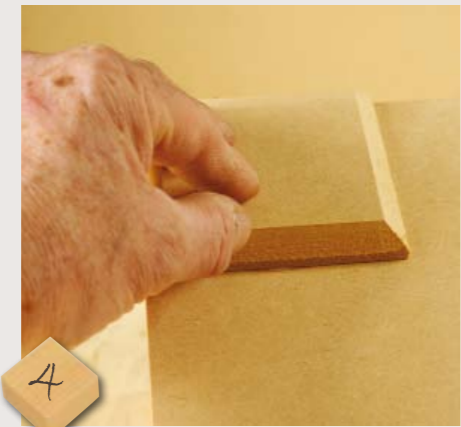
1 The first operation is to make the carcass that the drawer will slide into. This needs to match the size of the dolls house (or whatever) that sits on it. However, you may want to make a drawer and box like this to suit another large object so size it to that, instead. Make up a cutting list and cut out the parts



2 Butt joint all the components together using PVA glue. Ensure all the edges are flush. Use plenty of clamps to hold it tightly so the excess glue is exuded, and wipe off the surplus. For this task, butt joints are quite strong enough



3 The short legs are simply recycled bed legs with the castors and sockets removed. The screw threads need to go into thick enough material so we need to make special pads to give that extra thickness. A bearing-guided bevel cutter is used in the router table, with a breakthrough fence, to bevel the edges of the pads the legs will screw into. Note the slot cut into the breakthrough fence to allow the bearing to pass through when the fence is pulled back on to the moving cutter



4 Rub the glued blocks into place, lining them up with the edges of the carcass, and leave to set for some time as screwing the legs in could loosen the bond if not set properly. I was in a bit of rush and that's what happened to me!



5 Use a small router and a standard 6.4mm straight bit or a spiral router drill bit if you own one, to drill a hole in the centre of each pad. Mark the centre position first and set the speed to the lowest, and aim on to the marks, drilling deep enough to take the threaded rod on the leg. Now, simply wind the leg into the hole and the thread should bite and cut its way into the MDF and form a solid fixing



6 Now for the drawer dovetails. The fence is set exactly perpendicular to the table slot. This is done by holding a square against the fence and the table side which itself should be parallel to the slot. Note a high subfence has been fitted to the existing lower one, so it gets cut and can be replaced if necessary. It is now ready to form the dovetails. In all cases the cutters used should protrude 0.5mm higher than the material thickness, so there is a little to sand off later. The neck of the cutter is marked on the table so the slot marks can be lined up



7 Mark the sub fence to line up the workpiece edge so the end slot is cut in the right place. To do the other end slot, flip the workpiece around and line it up to the original mark. Make a second mark on the sub fence for machining the centre slot. You should now have three evenly spaced slots forming two dovetails and two narrow half dovetails at the ends



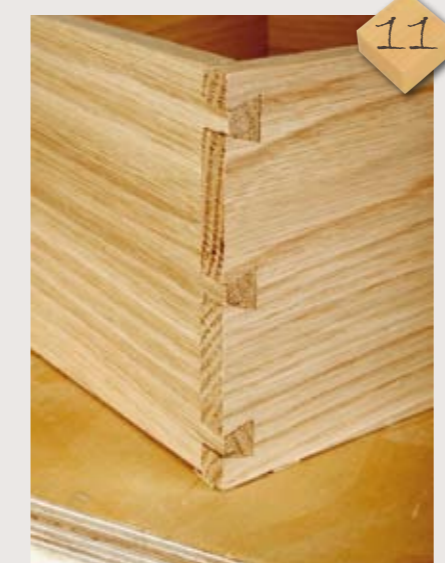
8 To cut the other half of the joints, carefully transfer the slot positions to the front and back boards ready to create the pins. The marks are then transferred up the external face of each board onto the face of the workpiece which will be visible on the outside of the drawer box



9 Set the fence at the angle to match the slope of your dovetail cutter blade – which can have an angle of between 102 and 105° – depending on the cutter you own. Sight down a dovetailed board set against the fence, until the tail is parallel with the table pencil line. Quite a lot of wood is to be removed, so a 9.5mm straight cutter is installed, and marks made on the table showing the diameter of the cutter. Line the pin marks on the workpiece up with the right hand of these lines and cut the first shoulder. Machine only the left hand side of each pin



10 Now, swing the fence to the opposite angle and machine the other side of the pin shoulder and then keep machining all the waste out between the pins. It really helps when doing this to clearly mark up your waste beforehand with hatched lines. The last shoulder is at the outside and you should be left with three, evenly sized, evenly spaced pins



11 The three pins look neat and even enough, but the acid test is always that the joints are a neat fit, and that they push together with just a tiny bit of resistance? After several trial attempts and learning how to get the best from the setup, here is quite a respectable joint



12 The drawer needs a base, of course, but without losing too much interior space. I opted to run the 6.4mm base slot right in the middle of the bottom pin and did so without any problems with drawer integrity. Rather than doing stopped grooves it is easier to run right through. Once the drawer is assembled the little slot can be plugged with a matching plug

