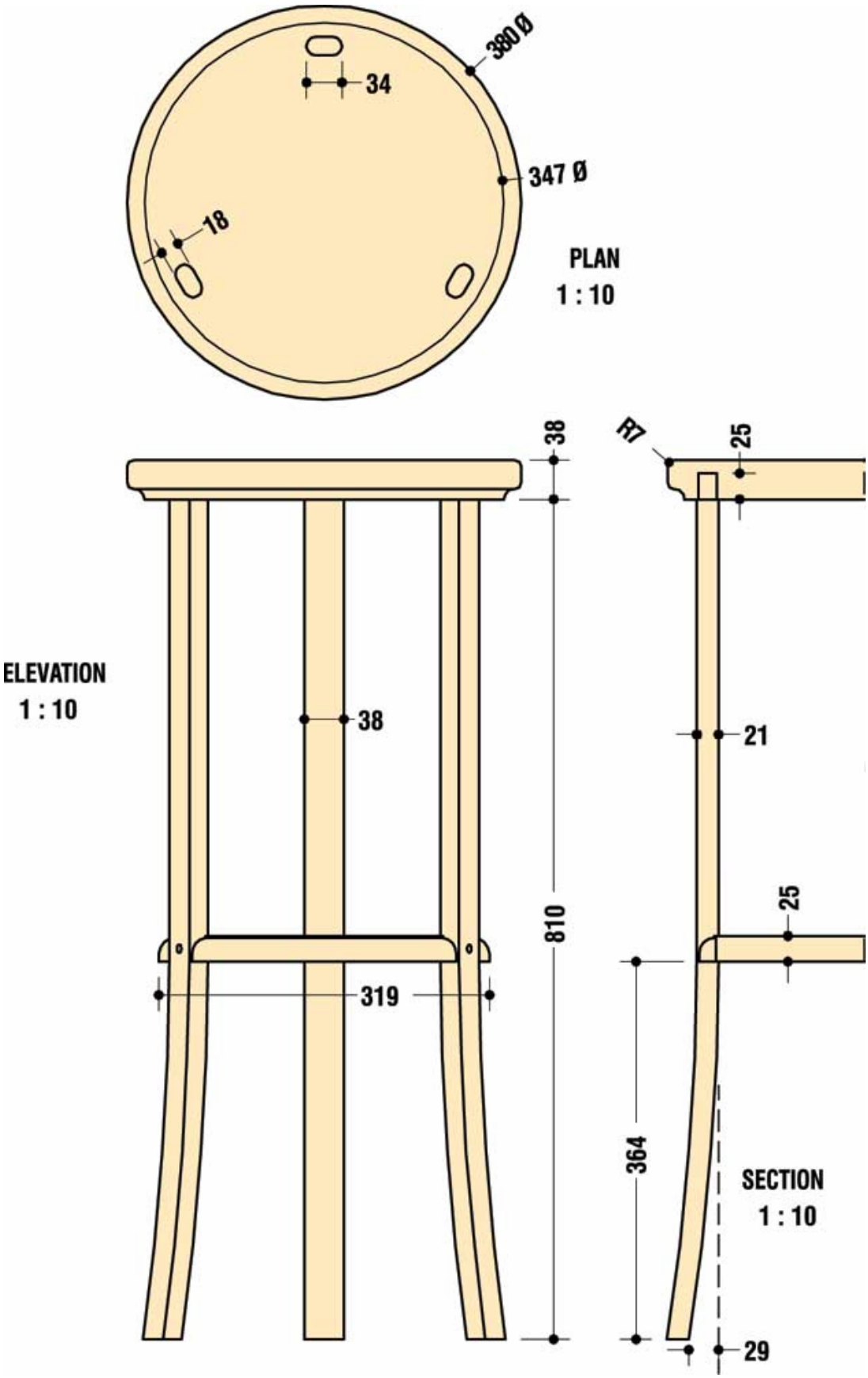
Plant Stand

Most router tables have a mitre protractor slot often of a safety pattern whereby anything pushed into the slot cannot simply lift out but is trapped. I used slot fitments from some featherboards to make the jig. A screw goes through one of them underneath and into a pre-drilled hole in the centre of the blank. A long straight cutter is fitted in the router collet and a stop board is clamped beyond the cutter. The front edge of the jig base is cut away in a curve to avoid the router cutter having to work more than necessary. Press the blank up against the cutter body between the blades and set the stop board against the jig base; it must slide under the blank. Withdraw the jig and switch on the router. Grasp the blank firmly and slide the jig towards the cutter which will then begin to bite and turn the blank anti-clockwise towards the cutter rotation. Do not let go of the blank until a section has been cut; if you do the cutter will just run idly against the blank, and if you don't grip the blank as you move it onto the cutter first of all, it will get caught by the cutter and spin the wrong way very alarmingly - but worse still it will rip some of the end grain out! Repeat this rotation cut, moving the stop board back a millimetre or two each time until the correct diameter has been reached. Repeat this technique for the other blank and you will have two perfectly smooth, round, flat-edged blanks. See steps 9 - 13 for more information.


380 Ø
34
347 Ø
18
PLAN
1 : 10
38
R7
25
ELEVATION
1 : 10
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21
25
810
319
364
SECTION
1 : 10
29

When I started this project it seemed deceptively simple, which in one sense it is but there are two distinct aspects to it, laminated legs and the routed top and shelf. There aren't many components but it's important to get them right so it looks well proportioned and strong.

PREPARATION

I used beech because I had it in stock, but ash is the typical choice for laminating as it bends easily without breaking.

Start by preparing the circle blank, each of which consists of two halves butt-glued together after planing and thicknessing. The legs are a series of strips cut from 50mm sawn stock 4.5mm thick.

Mark each board before cutting into strips so you can reassemble them for a good grain match. I did these on the tablesaw; this was a bit wasteful and can cause burn marks, but my bandsaw blade was a bit blunt and I didn't trust it to cut accurately!

USING JIG

Using the drawing as a guide, mark out the leg curve on the softwood and bandsaw it out. Glue it to a long piece of 50 x 50mm prepared softwood to make the entire former. It needs to be screwed to the MDF but NOT glued. The reason for this becomes obvious later on.

A crucial thing is to use a release agent, so ensuring that each glued up leg blank doesn't get stuck to the jig. Petroleum jelly is good for this as it is clear and non-staining. It will need cleaning off later with white spirit though, as it is greasy.

The area where the former touches the board is where most glue will build up. In addition use some paper to cover the board, shaping it to fit neatly against the former.

PVA glue is unsuitable for laminating work as it flexes when dry. Instead a powder glue, Extramite, is required as it sets rock hard. Mix it up according to the instructions, photo 1, ensuringa nice smooth mix without lumps. Apply to one meeting face of each strip, photo 2, and assemble the pack of five pieces. Place them against the former ensuring there is enough length for both the straight and curved sections. I use Irwin clamps, photo 3, to press the pack against the former as they exert enormous pressure but the rubber facings don't cause damage. Make sure all the strips are level and leave for 24 hours to set hard.

Remove the clamps and make up a cam from MDF, photo 4, to hold the leg in the jig. Great pressure is no longer required. The screws holding the former must not be too long as the leg and jig will now be fed through the thicknesser. The intention is to remove the glue and plane the edge smooth.

Now unscrew the former and turn it over, repositioning the cam, placing the turned over leg in the jig and running it through the thicknesser again to smooth the other edge until the leg is 38mm wide, photo 5. Repeat with the other two legs.

TOP

While the leg glue-ups are taking place get on with shaping the top and lower platform blanks. Make up a homemade trammel bar with a pencil to mark both circles and bandsaw slightly oversize, photos 6 & 7.

The finished shape is achieved on the router table, using a special jig. I wouldn't claim it is unique but I haven't seen it described elsewhere and it does work. It is the same principle as bandsawing circles using a special fixed trammel point or jig, see Circle blank cutting, over page.

MORE ROUTER WORK

The underside of the top is wasted away using a large classical bearing-guided cutter, photo 8. This gives two successive curves plus a slight step, resulting in a much thinner appearance, photo 9. This can be achieved on the router table or freehand.

The lower platform calls for a large-diameter roundover cutter set down enough to give a step shape at the top, photo 10. All these operations should be done in several depth stages to avoid too much strain on the cutters.

JOINTING

The legs are mortised into the top so marking out must be accurate. In fact I drew one line that ran through the screw hole, and made a mark by eye for the other two positions and then used a ruler to check the distances between the marks on the circumference, photo 11. They were almost exactly correct and needed only slight adjustment - thank heavens for the 'cabinetmaker's eye'!

Now draw a line through these two marks and the screw hole to create the 'pie chart' appearance. Mark the mortises the correct distance in from the edge, allowing for the leg tenon which will be shouldered.

Make up a jig to machine a mortise. only slight adjustment - thank heavens for the 'cabinetmaker's eye'!

Now draw a line through these two marks and the screw hole to create the 'pie chart' appearance. Mark the mortises the correct distance in from the edge, allowing for the leg tenon which will be shouldered.

Make up a jig to machine a mortise. This will rest against the circumference and is intended for use with a guidebush and a 12.7mm-diameter cutter. It gives a well-rounded hole, photos 12 & 13.

The tenons are marked and cut by hand. They need to be slightly shorter than the mortises to allow for glue squeeze out.

Next, the platform must be bridled into the legs, removing the least amount necessary from the legs to keep strength at this point, photo 14.

Mark each bridle down from the top of the leg to avoid any mix ups. The leg should slightly overlap the upstand edge created by the roundover cutter when the joint is assembled.

ASSEMBLE...

Dry assemble the table and use a counterbore bit through each leg into the platform so it just goes in enough to fit a beech plug after running a screw in.

Completely sand all surfaces and glue and assemble marked joints, photo 15, including screwing the platform in place, then place heavy weights on the tabletop to close the joints until they are dry.

Once the glue is set, place the table on a flat level surface, determining this with a spirit level. Place a block or ruler against the foot of each leg and mark a line. Draw across the flat of each leg using a square, saw carefully to the lines and sand the bottom edges.

...AND FINISH

All that remains is to apply a finish. Bearing in mind that plant pots sometimes leak or get over-watered, a clear varnish is probably your best bet. The result is an elegant addition to a modern living room.

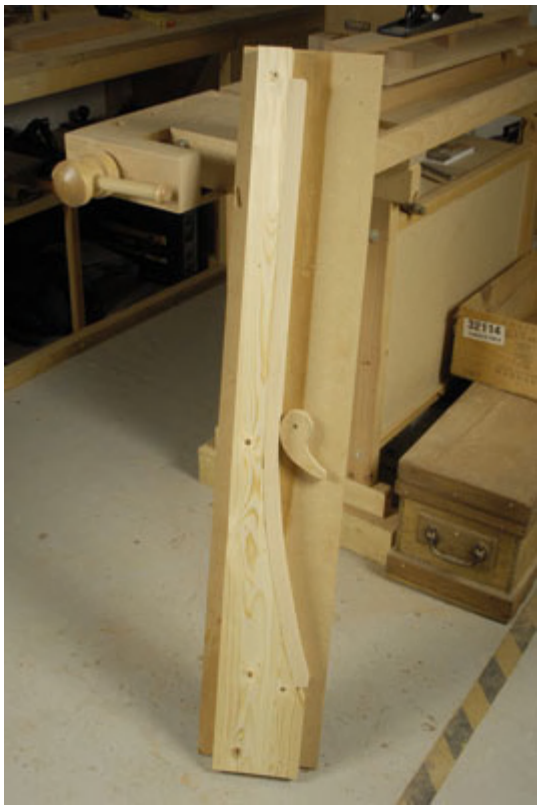
1 Mix the powder into the water thoroughly until a smooth mix is achieved

2 Apply the glue to each lamination in an even film using a slip of wood

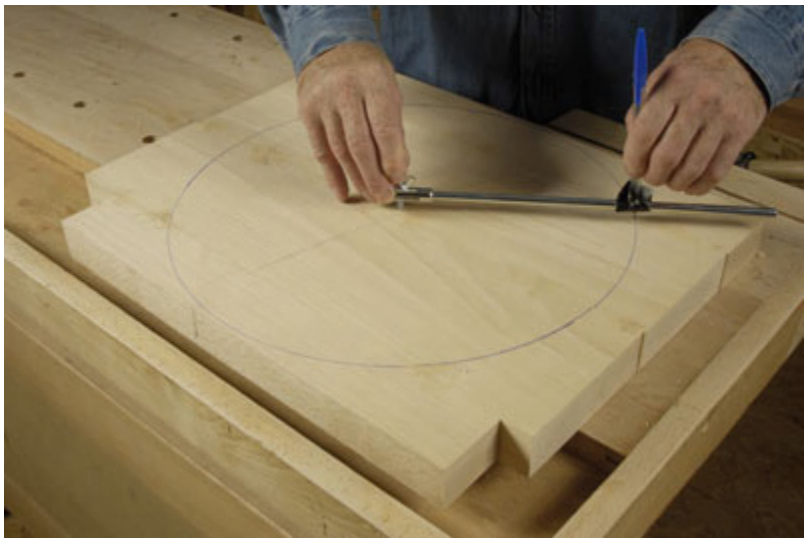
3 The jig with the glued components ready to be clamped in place

4 These clamps are immensely powerful but the rubber pads prevent damage to the workpiece

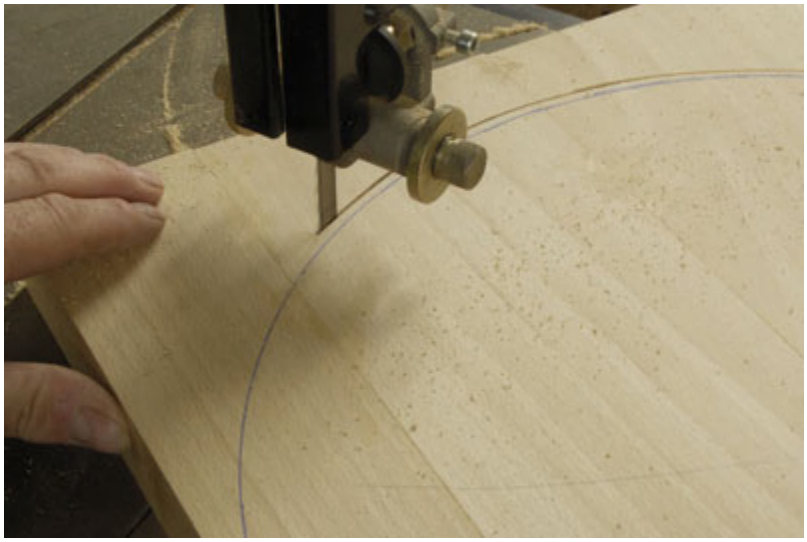
5 The clamps are replaced by an MDF cam for thicknessing



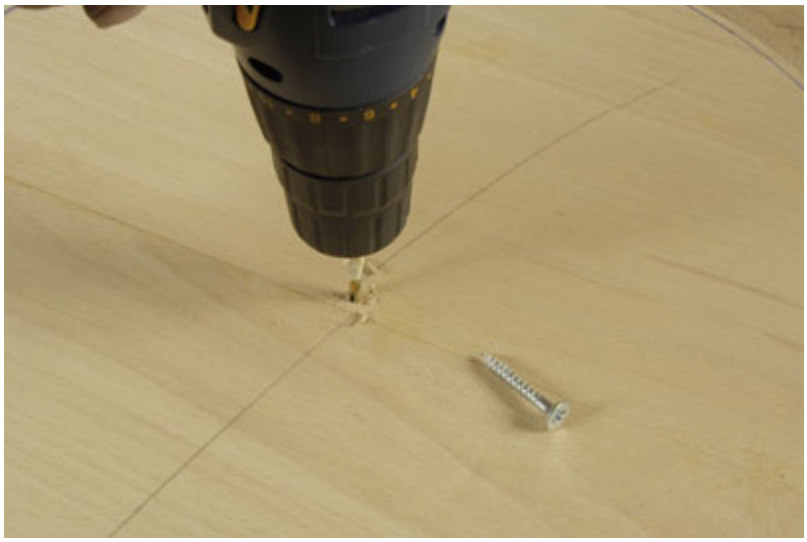
6 The jig is turned over in order to thickness the other leg edges



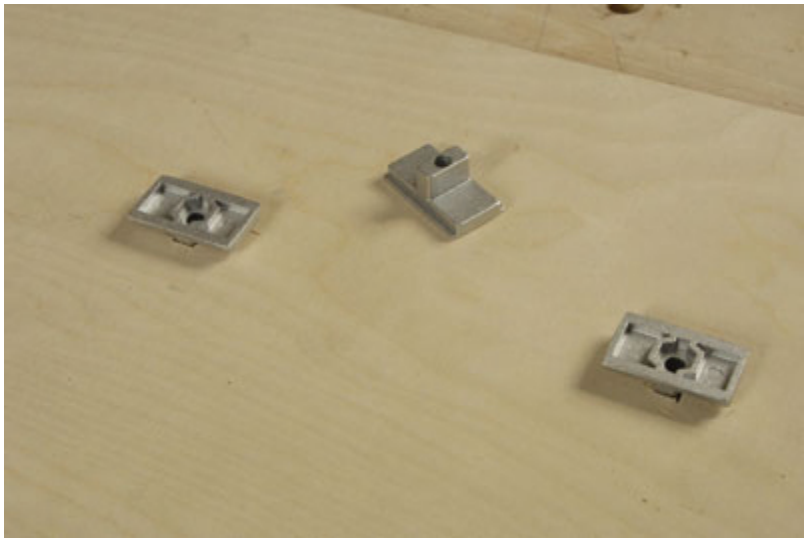
7 A router trammel bar and a taped-on Biro work quite well for marking out circles



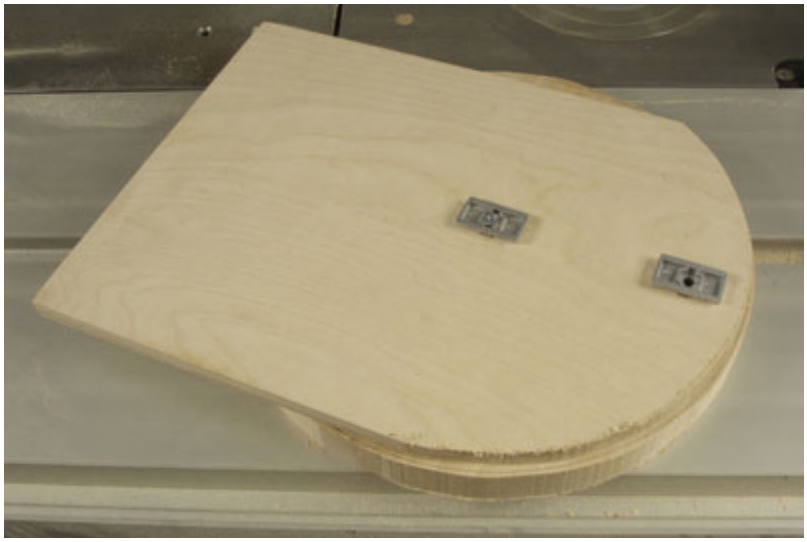
8 Cut 2-3mm outside the marked line to leave just a limited amount to be machined away on the router table



9 CIRCLE BLANK CUTTING: A piece of masking tape is applied to the drill to act as a visual depth stop

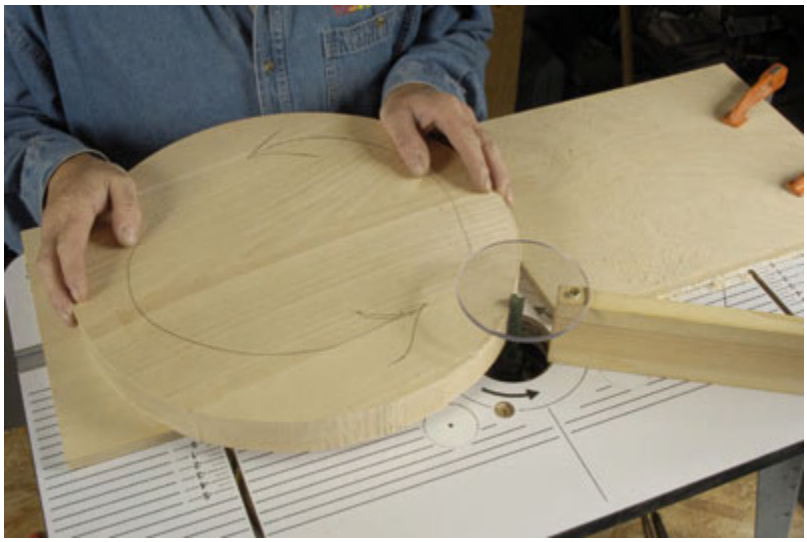


10 These fittings from the router table featherboards provide a perfect way to hold the jig on the table



11 The underside of the sliding circle-cutting jig with a blank attached

12 The jig setup ready to cut; note the stop board clamped firmly in place and the cutter guard

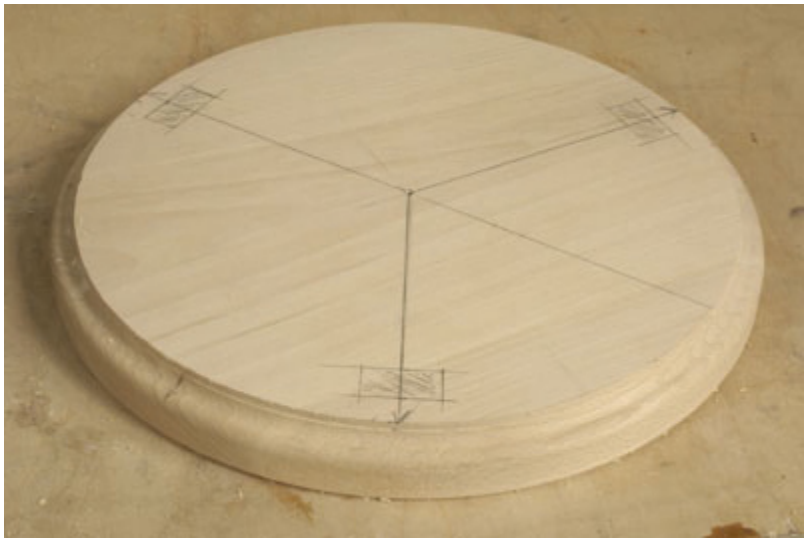


13 When cutting hold the blank firmly to prevent it spinning the wrong way and causing damage; note the rotation marks as a clear reminder to the operator

14 Machining the underside of the top using a large classical profile cutter

15 The resultant shape after doing both top and bottom cuts before sanding; note the slight step near the bottom of the profile

16 Machining the large roundover on the lower platform is safer done on the router table; note the improvised lead-in pin

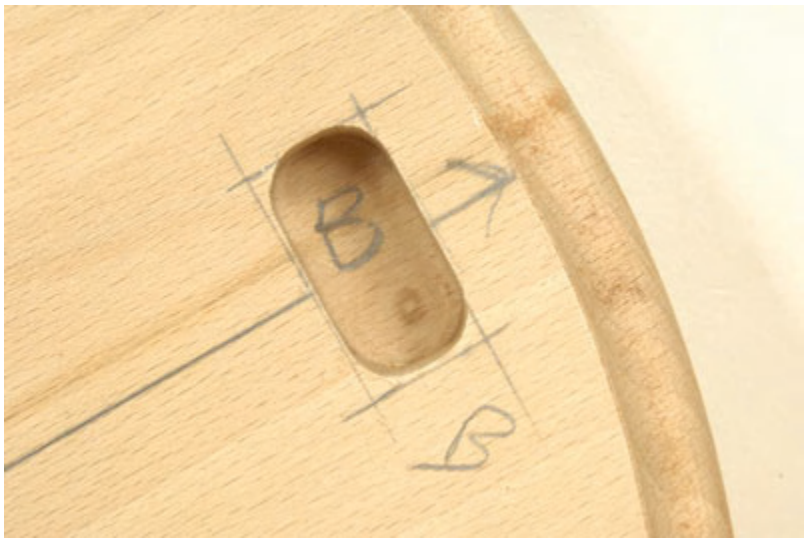


17 The "pie-chart" lines set out to allow marking the mortise positions

18 The underside of the mortising jig showing the bandsawn detent which allows the jig to sit properly on the curve

19 The jig firmly clamped in place and overhanging the bench for mortising

20 Using a pullsaw to cut the leg bridle; take away the minimum possible to avoid weakening the leg



21 Writing the joint letter inside the joint allows each one to be identified after the surface markings have been sanded away prior to assembly