"the Shakers' designs continue to influence trends of the 21st century"

Shaker bench

Michael T Collins shows you how to make a simple Shaker bench, with a different take on the traditional sliding dovetail

PHOTOGRAPHS BY MICHAEL T COLLINS

Michael T Collins

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

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Cutting List

Hard (rock) maple, cherry or pine
Top 1830 x 215 x 30mm x 1 off
Legs 380 x 215 x 30mm x 2 off
Stretcher 1780 x 115 x 30mm x 1 off

Tools

Jointer, jack, shoulder, combination, router, block and scrub planes
Marking and cutting gauge
Marking knife
Shop-made winding sticks
Try square or combination square
Bow or coping saw
Selection of chisels
Fine tooth rasp
Dead blow hammer

The Shakers came to America in the 18th Century and over the years, became highly skilled woodworkers, developing their own sense of design. Their furniture and interiors were simple and austere. They believed that everything should be made with a minimum of extra detail or decoration, and only made for their intended use.

Looking at some modern furniture designs, it is clear that the Shakers' style continues to influence trends of the 21st century; Danish Modern tastes are a good example.

This bench is going to be used outside and so will be made in hard maple *(Acer saccharum)*. It would also be durable enough for use in a 'mud room' or elegant enough to grace a hallway. Many fine examples of original Shaker furniture can be seen in the collection of the Shaker Museum and Library in Old Chatham, New York.

Preparing the wood

In all the projects I have written about, I invariably start by saying 'prepare the wood to its final dimension'. How does one do that? My steps may be different to yours, but they work for me. It is best to find boards as straight as possible; mine was slightly bowed along its length and had a slight cup. There was also a 'kink' at one end, however, fortunately I was able to cut this off and was still able to get the two legs and seat out of it. Start by roughly cutting the pieces to length, leaving the legs as a single board for now.

1 Snap a chalk line along the length of the boards so any bowing is clear.

2 Then, with a jointer, bring the edge down to this line. I keep a block of bees wax handy; it's amazing how easily a heavy plane slides across the wood when wax is applied to the sole and friction is reduced.

3 Start by flattening an edge. Once planed, mark it with a cabinetmaker's mark; this is known as the face edge.

4 If the board is cupped, place it so the convex side is uppermost: it is more stable this way. If the board rocks, place small wedges under it to keep it steady. Next, using a shoulder or combination plane, flatten a 12mm section at one end of the board to a depth that just clears the cup and at right angles to the planed face edge.

5 Sight down the board with a pair of shop-made winding sticks. A winding stick allows you to see if there is any twist in the board. If the winding stick 'marker' at the far end is occluded, adjust the rebate until you have the winding stick parallel. This picture shows the slight twist in my piece of board.

6 Now snap a chalk line the length of the board on the edge, from one rebate to the other. Repeat this on the other edge. Plane each rebate slightly lower if the snap line does not lie within the board's entire length. The idea is to have the two flat areas with the snap line being co-planar and at right angles to the edge. ➤

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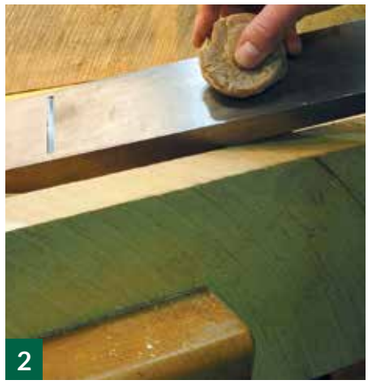
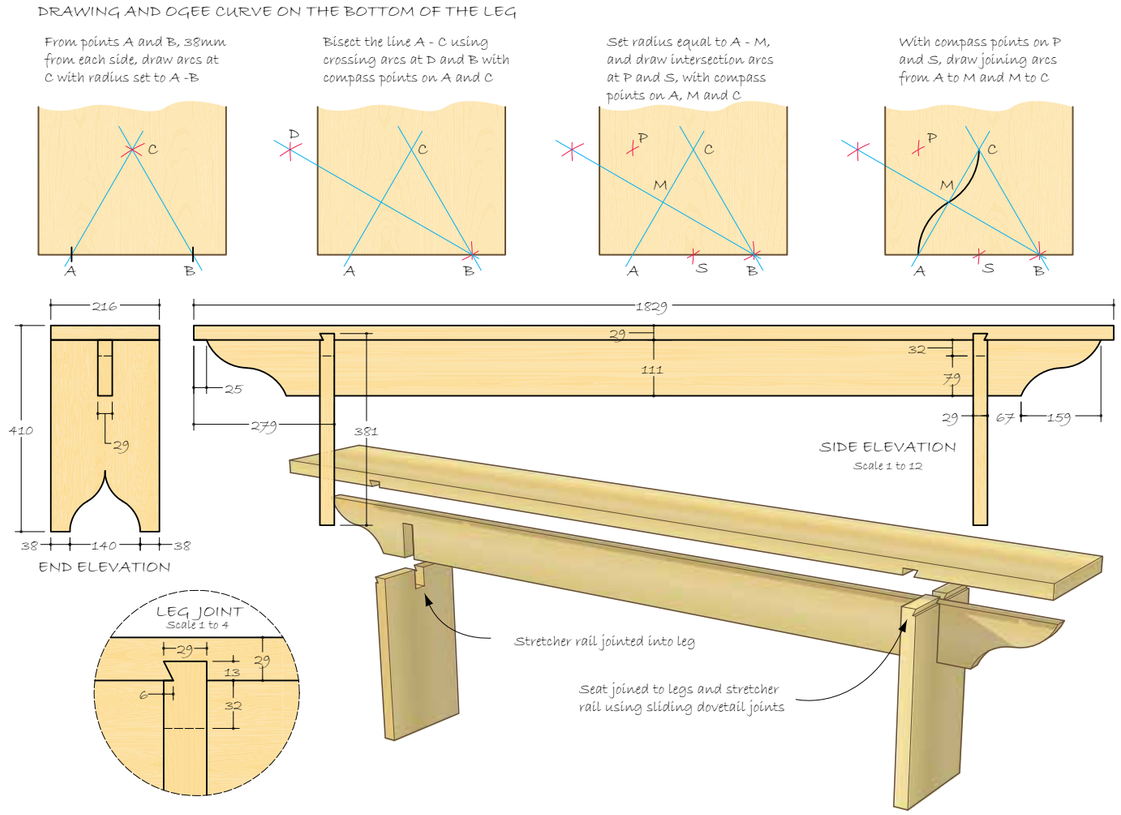
Shaker design

Shaker design certainly wasn't about straight or square shapes at all. Think of their maple-strip hatboxes, the carefully laid out ogee curves on this bench project or the wonderful example shown here, of a complex whorl shaped staircase with mind boggling mathematics involved in its setting out and construction. The shapes created were only those needed to do the job and making it pleasing to the eye, no extraneous detail was allowed.





7 With a scrub or jack plane, work diagonally across the board (from the planed edge) bringing the surface down to the snap lines. It's a good idea to chamfer the exit side of the board so that tear out is minimised, especially with a scrub plane that takes big 'bites'.

Once the board is brought down to the snap line, you can switch to a jack plane. Again, work diagonally across the board; I skew the plane slightly so that it slices across the fibres. Check for flatness using the edge of the sole of the plane. Finally, end with a jointer, planing down the length of the board. The jointer will bring the ridges down with each successive pass. Stop once continuous shavings are being taken by the plane. Mark this as the face side.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8 From the newly-planed face side, using a marking gauge, deeply mark the thickness of the wood on all edges. Repeat the planing regime on the opposite face. The gauge line will act as a stop and will be revealed as you plane down to it. A pencil line would be missed. Check for squareness. Lastly, gauge the width of the board from the face edge using a combination square, or marking gauge if it will reach, and plane down to this line. You should now have boards that are uniformly thick and square and you will have had quite a workout!


8

The sliding dovetail housing

9 Cut the seat, stretcher and leg boards to the final length and square all ends. Starting with the seat, come in 280mm from each end and strike a line across the board; this marks the vertical side of the joint. It doesn't really matter which way round this joint is made, but the two joints should mirror each other. Use the leg to mark the width of joint


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with a pencil. The angle of the dovetail is 1:2 so come in 6mm from the line. Mark a 12mm depth on the face edges.

10 Using a chisel, cut a 'V' notch on both sides of these scribed lines. Saw down the vertical and the angled lines. If you need to, use a block of wood with the same angle as a guide.


10

11 Remove the bulk of the waste with a chisel and then clean up the joint with a router plane. Since these joints have been custom made, you will need to label the mating parts.


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12 Check the depth of the housing. The combination square is a perfect way to do this as the base of stock sits on the board face so the rule can be adjusted to rest on the bottom of the housing.


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The sliding dovetail

13 Take the depth of the housing and transfer this to a cutting gauge, marking this on the end of the leg. Transfer the same angle to your bench leg and mark with pencil.


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14 Cut a 'V' notch and saw down to the shoulder. The waste can be pared away with a chisel. These steps were covered fully in my article on Making a Shaker Shelf Unit in *Woodworking Crafts* issue 16.


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15 Test fit the joint. When I first saw this joint I thought it would easily come apart, but it is surprising just how strong the joint is.


15

The half lap

16 The stretcher is 50mm shorter than the length of seat. Place the seat face down. On the underside of the seat, position the stretcher so that it is centred along the length. Transfer the locations of the housings to the stretcher. I am a firm believer that taking measurements and locations directly from the actual item goes a long way to avoid errors. Once the measurements are transferred, saw down to the bottom of the joint and clean up with a chisel.


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17 Repeat the process on the leg pieces. The leg piece section has a notch 335mm deep while the stretcher's notch is 80mm deep. These should be a snug fit but not so tight that putting them together splits or bows the wood. ➤


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18 The end result should have the stretcher seated just below the shoulder of the dovetails. If the stretcher is proud of the joint, plane down the top of the stretcher.

Stretcher and leg profiles

19 The profile on the stretcher is cut using a coping saw. To clean up the profile, use a spokeshave, abrasive paper or a card scraper. Once all the parts are complete, use a block plane to add a 3mm chamfer to all visible edges. Lastly, give the whole surface a sanding with 220 grit paper.

20 I drew a cyma/ogee curve for the legs (see diagram for instructions), but any design that is pleasing to you will work.

21 Cut out the curve with a coping saw and clean up the shape using a fine tooth rasp.

22 Apply a bevel to the stretcher ends using a spokeshave to give a finished authentic appearance.

Assembling the parts

23 This is where a third hand would be helpful… Slide the legs into the housing up to the lap joint, then fully insert the stretcher. Finally slide the leg/stretcher section into place. With the lack of glue, a little beeswax can be used to help the joints go together. Attach the stretcher to the seat with three screws, one at each end and one in the middle. Drill a slightly oversized, countersunk hole in the stretcher and a pilot hole in the seat and fix with long steel screws.

The finish

24 Finish the whole surface progressively with 120, 180 through to 220 grit sand paper. I like to sand by hand; that way I can feel the surface quality.

Wipe down the entire bench before applying a finish, which will depend on where this piece is going to reside. You can apply tung oil or linseed oil for interior use, which will bring out the grain of the maple. For a more durable finish, use polyurethane. Alternatively a couple of coats of contrasting milk paint, rubbed through in areas that would have shown wear over the years, will give your bench an authentic 'shabby chic' look and feel. ■


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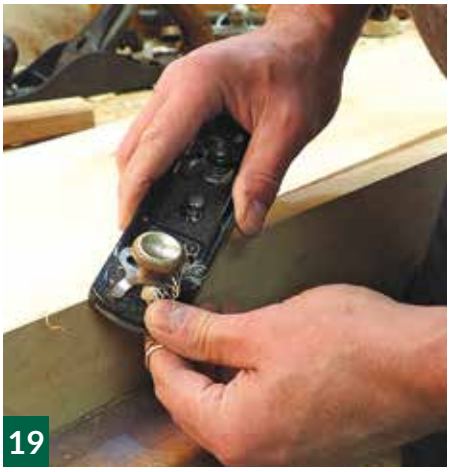
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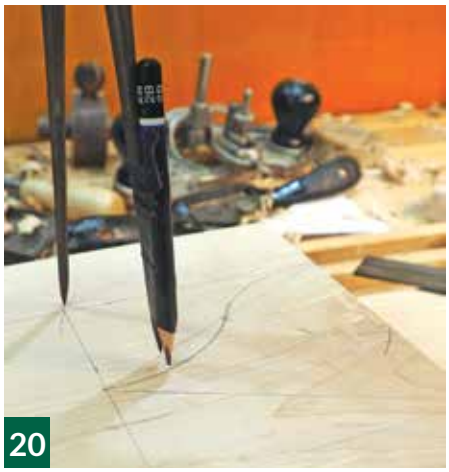
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Next month…
Michael makes a 'wormy' side table