

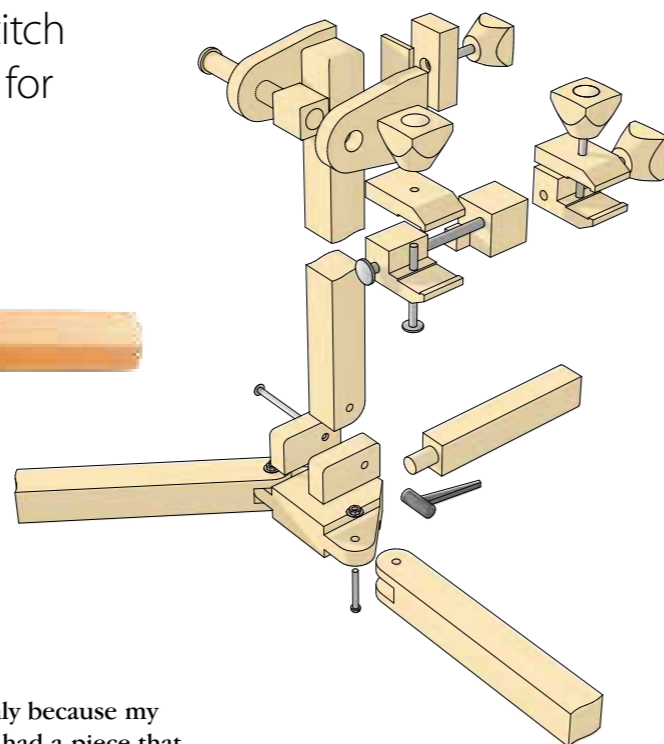
Cross-stitch stand



Chris Grace builds an improved version of an earlier cross-stitch stand as a birthday present for his mother



PHOTOGRAPHS BY JEAN GRACE

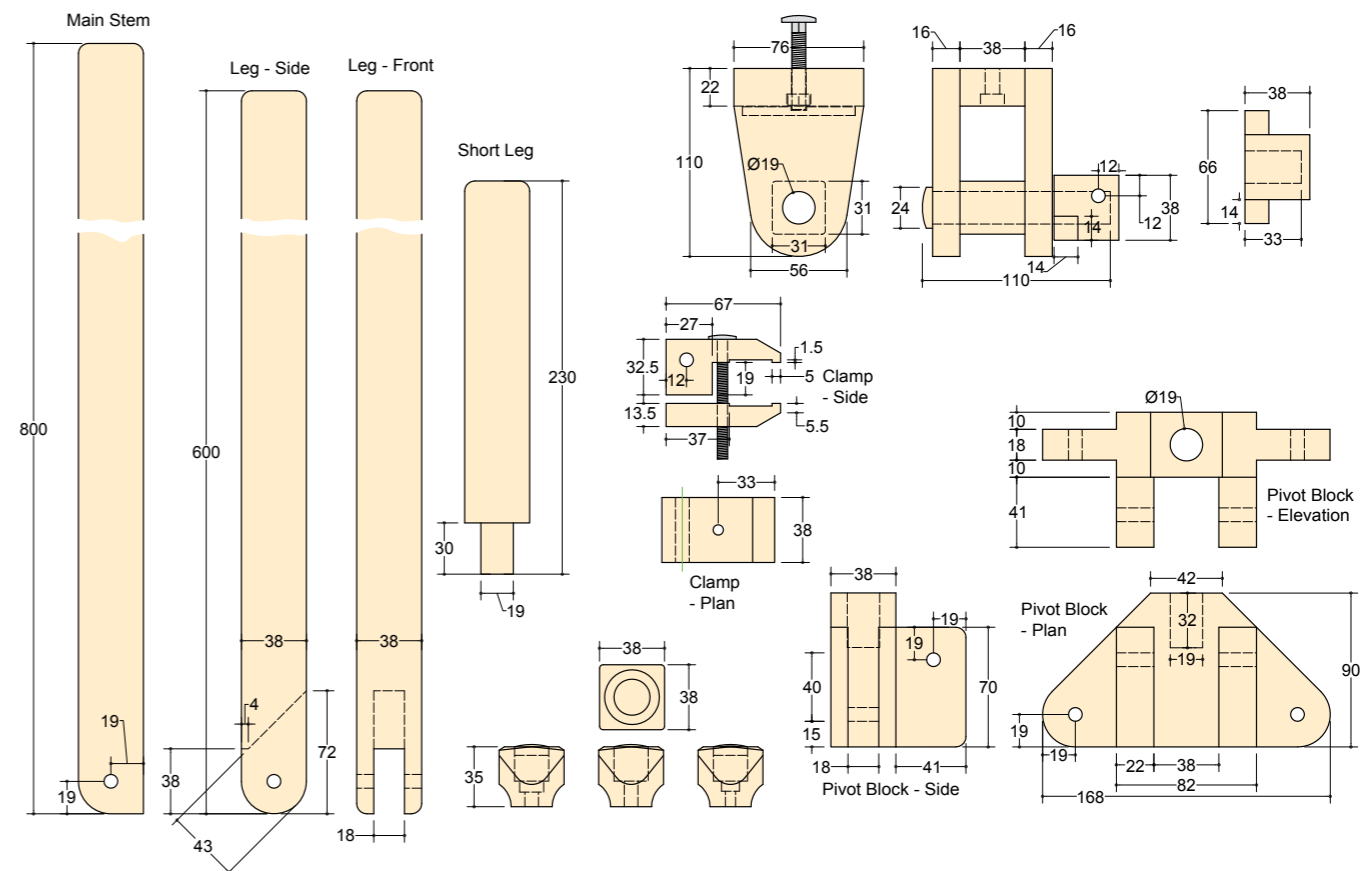


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It's difficult to find birthday and Christmas presents to buy my mother, especially as she is now 80 years old. So, when an idea presented itself a few years ago I grabbed it with both hands, as she expressed an interest in a cross-stitch stand so that she could more easily undertake larger projects and have them positioned for her to reach comfortably while working. As my mother is particularly enthusiastic about small and compact, I needed to design something that was functional, but could be collapsed easily and stowed in a small space. I gave my original design to her for Christmas four years ago and it has worked well. I just thought I would make a couple of small tweaks for this version, such as making it taller so it could be used from different chairs. This time the material would be oak

(*Quercus robur*), mainly because my local timber merchant had a piece that was almost the ideal size to complete the entire project if I cut it carefully. I re-did the CAD drawing, making the tweaks I intended, mainly to make it look a little more refined, to improve the design of the knobs and to increase the clamping force on the key joint for the main upright.

1 The first step is to trim both edges of the board to make them square and parallel. With the board now trued up, you can begin to cut the longest stick for the central post 38mm wide.

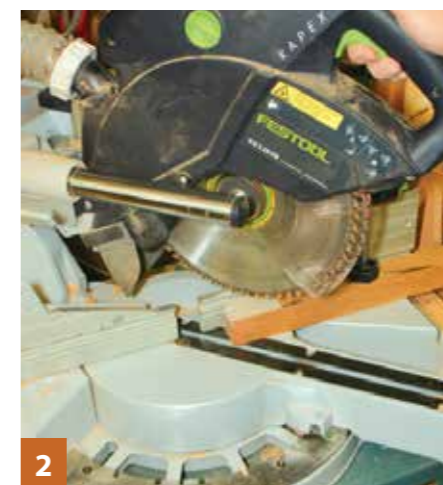


2 Next, cut the end off the board, leaving 620mm for the remaining sticks and allowing for a final trim. Cut the two legs and a stick for the other bits from the 620mm section. To make it easier to round over the ends of the legs, make small 45° cuts to remove most of the waste.

3 It is easy to burn oak on the belt sander, so keep the wood moving all the time to ensure the wood doesn't scorch. It is good practice to keep the abrasive belt clean and change it when it is worn out.

4 With the sticks cut to size and length put a radius on each edge with a bearing-guided roundover bit in the router. Use dust extraction wherever you can; it allows you to breathe easily in the workshop and makes clearing up much quicker too!

5 Sand to quickly smooth the remaining saw marks and slight scorch marks from where you may not have kept the wood moving through the saw quickly enough. Where possible, sand several pieces at once; this gives a more stable platform to sand and helps prevent rounding over the square sticks more than you intend.



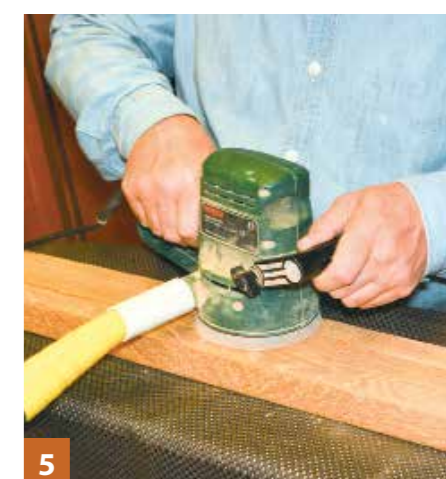
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6 Now move on to drilling the holes on the drill press. To ensure accuracy and to keep them square, use a brad point bit. You will find that this helps prevent wander in coarse-grained woods. Use masking tape on timbers like oak; this will make it easier to mark exactly where you want and will also allow you to more easily see the marks later.



7 You can then hand sand the big bits to finish them off. For this step, use a hand sanding block with vacuum extraction, which will allow for dust-free sanding.



8 It's now back to the chopsaw to cut the smaller bits, using a stop stick to make identical parts where necessary. Chamfer the stop stick to prevent sawdust building up in a corner and altering the length of the workpiece when cut. It is important to wear eye protection here, just in case any pieces get ejected.



9 The clamp pivot requires a small stop on each side to position the clamps; the easiest way to make this accurately is to nibble away the waste on the chopsaw using the trenching function, with it still attached to the larger piece of wood. Then, cut it off and file it smooth.



10 Shape the top half of the clamps by trenching on the chopsaw, on the ends of a longer block before cutting it off once all the detail cuts have been made. At this stage, you can also cut the clamps square from their stick.



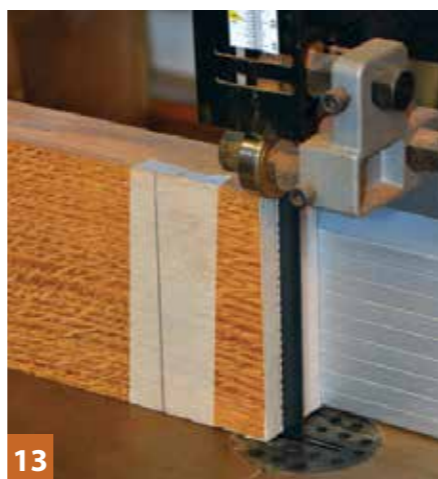
11 Shape the bottom half of the clamps using a jig to hold them securely. Remove the slight ridges left by the saw blade with the aid of a No.2 cut flat file.



12 The legs of the base require a slot at 45° to fit on the tongues of the central block. Nibble away the wood to form an angled slot; this can be achieved on a tablesaw, bandsaw or router with an appropriate 45° jig attached.



13 You can also do the cheek cuts on the central block on a bandsaw, or if you prefer, with a router and a long straight cutter on the router table.



14 Drilling against a sacrificial block reduces tearout on easy-to-splinter timber like oak. It is just too dangerous to drill such a small block without a vice, due to the size of the Forstner bit. When doing this, ensure to rest the handle against the column of the drill; this will give you added security.



15 Having now completed all other operations, cut the wings on the main pivot block at 45°. The stop block ensures both sides are identical. Make sure your fingers are away from the blade and the heel of your hand is pushing against the front of the machine for additional security. While at the chopsaw, the cheeks of the clamp should also be angled and then cut in half.



16 Here you can see the detail of the completed pivot block assembly, once it is finished and ready to fit.



17 Now, on to the lathe where the short third leg will receive its spigot, which needs to be a tight fit in the 20mm holes bored with the Forstner bit.



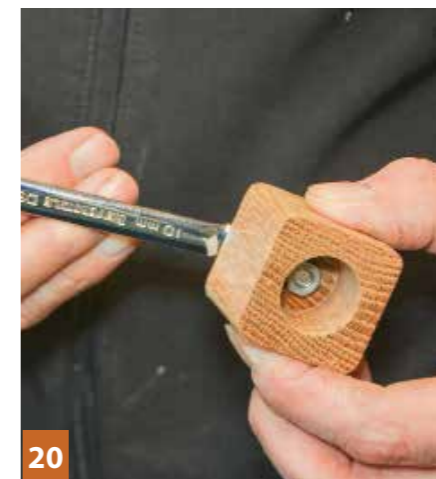
18 You can now test for fit. You should see a burnished ring on the spigot indicating how much – or little – more needs to be removed for the perfect fit.



19 Hold the handles in the chuck jaws, protected by tape, which will help to eliminate marking the wood. Drill them in stages with the smallest drill first to suit the nut or bolt they will receive.



20 Pull the nut into the handle recess with a bolt, with CA adhesive for security and to harden the wood.



21 Press the handles against a cork faceplate with a revolving centre and turn one end.



1. When making pairs of items it is sometimes easier to make them on each end of a larger piece of wood so that you can use the same saw setup for each cut.

22 Then, with the end plugged using a contrasting timber, turn by screwing them onto a small chuck-mounted faceplate.

23 Turn the pivot pin with a button on the end so it won't slide out – another minor, but worthwhile enhancement.

24 All the carefully prepared pieces for the stand are now ready for assembly.

25 To ensure the pivot pin moves freely in use, careful alignment is required. Use a clamp while drilling the pilot holes.

26 Assemble and cross drill the pin. The bolt holds the pin in with the notch drilled in the side of the pin.

27 Again, use clamps to align the parts while drilling holes to screw the main stem pivot blocks on.

28 Here you can see the detail of the assembled components – in this case the leg base and the pivoting frame clamp.

29 This is how your final cross-stitch stand should look. ■



2. Use the most appropriate tool you have for the job. I could have done all the cutting

on the tablesaw, but as I am lucky enough to have a chapsaw also, I used that where it was more convenient or quicker.

3. Keep the wood moving all the time when using a belt sander to ensure the wood doesn't scorch, keep the abrasive belt clean and change it when it is worn out.

4. Use dust extraction wherever you can, now I can breathe in my workshop, and clearing up is much quicker too.

5. Where possible sand several pieces at once, this gives a more stable platform to sand and helps prevent rounding over the square sticks more than intended.

6. When marking out on timbers like oak with a distinct grain, I use masking tape, it makes it easier to mark exactly where you want, and to see the marks later.

