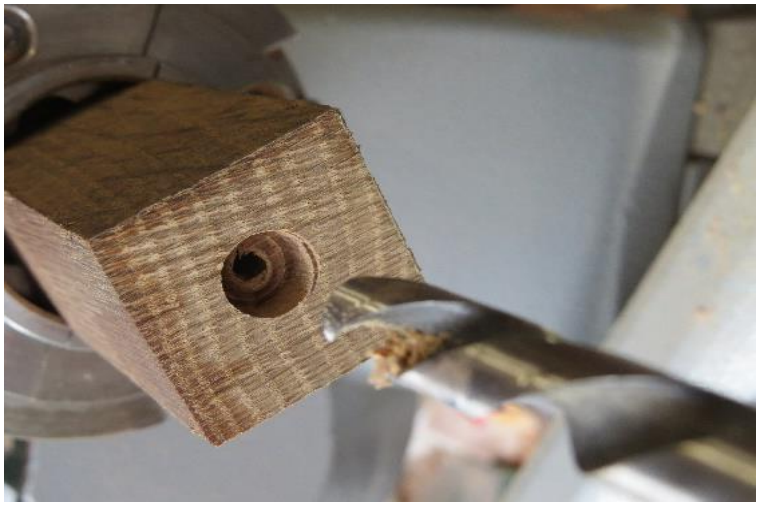
A Turned Walking Stick by Ian Elliott

Unlike some of our members I am not a stick maker; I have only made one stick before and that was a quite simple thumb stick! A couple of weeks ago I saw on the Antiques Road Show, a Swagger Stick that was made from several different woods. This got me thinking, could I make a walking stick out of different timbers on the lathe. My first thoughts for the joints were a turned mortice and tenon, but a walking stick must bear a lot of stress/weight, so the possibility of it snapping at any of the joints would be high. I finally decided on threaded rod running the full length of the stick. I purchased some 1Mtr. lengths of 6mm Stainless steel threaded rod and a packet of M6 connecting nuts.

I looked through what timbers I had. I needed 13 or 14 pieces about 70mm x 30 x 30 and of 4 or 5 different species, plus whatever I was going to use for the handle. 70mm long was determined by the length of my 6mm drill bit and 30mm as 25mm was the finished diameter I wanted the stick to be. I finished up with Oak, Tinwood, Sapele, Walnut, Beech and a piece of Ash 170 x 50 x 50 for the handle.



I started by drilling 6mm through the centre of each piece on the lathe, then a 10mm hole about 5mm deep at each end. I only did that on the first one, because I realised that as I was holding a not so square piece of timber in my 50mm jaws and that the 10mm x 5mm hole was not guaranteed to be central. My intention was for that 10 x 5 hole at each end to hold glue for added strength.

My solution to this was to use a combination 6mm drill bit/counter bore bit (part of a set I won in the club raffle) This would still give me that hole for extra glue. I centred using the 6mm drill bit part, prior to tightening the jaws.

I did one piece all the way through each stage as a trial, to work out any problems. Then I did all the other stages in a batch, so I was only setting up once for each procedure.

The next thing to work out was how to hold the pieces whilst turning. I used 12mm beech dowel held in the centre of my chuck, then turned the dowel to a tight fit stepped for both the 6mm and 10mm holes then tightened up with the live centre.

If you do not do all the pieces in one run you need to re-shape the dowel each time you put it back in the chuck, as it's impossible to centre it precisely a second time.

It was then a case of turning each piece to 25mm Dia. and trueing up both ends slightly concave. I did not sand at this point.

Starting from the bottom, I put the first three sections on the lathe together, the jam dowel still at the headstock and 6mm Beech dowels between each section tightened up with the tailstock. On the bottom section I made a slight taper (25mm to 18) but all the rest I kept parallel at 25mm and now sanded up to 250 grit. Cut in “V’s” at the joints and burnt lines in with copper wire, two coats of Sanding sealer. Removed the bottom two from the lathe, moved the third section to the headstock and added the next two sections, repeated as before with the first three. Then continued these procedures through all 14 sections, up to the handle. My reason for moving the third section down to be the first section each time, was because I thought I would have to true up between each section with the chisel on the lathe however, I only had to do that once for all the others sandpapering was all that was required. I include three beads for added decoration on the second last section and turned an 18mm x 15mm long dowel on the last section to go into the handle.

I opted to assemble the stick before I turned the handle, as at that point I was not fully decided on the design of the handle. I had some M6 round head bolts in stock, I cut one down to 20mm long and fitted it into the bottom of the first section.

With epoxy glue, I glued that bolt into the bottom and the 1Mtr. length of 6mm threaded rod into the other end, left them over night to cure.

I thought a round head bolt would look better than a ferrule

Next day, I epoxy glued the next 4 sections in place, using the remaining 9 sections in place (dry) to build up the length of the rod for clamping, with a large washer then a M6 connecting bolt tightened down to act as the clamp. This turn out to be very effective, again left-over night to cure. As I was using 5-minute epoxy, I was being cautious hence only gluing 4 sections. However, I felt more confident for the next lot, so glued the last 9 sections in one go, using the same clamping method.

What I had in mind for the handle, was to use both spindle turning and face plate turning. Though I was struggling to visualize 100% what the outcome would be. So, I experimented first with a piece of Tulipwood. What I had in mind worked in principle, but as I anticipated would need some hand carving to marry the two disciplines together.

First on the true centres, I spindle turned the corners off to give a 6mm chamfer. For the next procedure precise marking off is essential. Using a pillar drill and a 25mm Forstner bit I drilled a 10mm deep hole on two opposite faces in the position of the main shaft of the stick. Continuing to use the same centres, I drilled a 18mm x 16mm deep hole in the bottom to take the dowel on the last section of the shaft. Finally drilling a 6mm hole through the top and bottom for the threaded rod. Next on the lathe I drilled a 6mm hole through the centre of my MDF face plate. Then using the previously drilled 6mm hole through the handle section bolted it to the face plate, bottom face out over.

Now for the bit of off centre turning for the transition from shaft into the handle.

Then back to between centres, but this time offset to retain the transition section at the bottom of the handle. Then turning the hand holding part of the handle.

Offset centre for turning the hand holding part of the

True centre for turning to remove corners.

Upon initial completion of the turning, I was not happy with the results. The handle was not in proportion to the shaft. The original section was 50mm x 50mm, the hight was about right but, the width needed to be about 35mm and the hand holding part 25mm the same as the shaft. Rather than start again I took 7mm off each side on the bandsaw, then back on the lathe and turned down the hand holding part to 25mm. As I thought a small amount of hand carving was required to achieve a pommel effect. Hand sanded again up to 240 grit, parted off, 2 coats of Sanding sealer. By cutting 7mm off each side this removed the chamfer I turned first, but with hindsight this process was never needed!

I inserted a M6 “T” nut into the top of the handle which allowed the handle to screw directly onto the threaded rod of the shaft. Cut the threaded rod to the required length, epoxy glued the handle to the shaft and tightened down onto the threaded rod. I did epoxy an old half penny into the top of the handle to cover the “T” nut but, the epoxy I used turned out to be not totally clear so, it is a bit cloudy.

Applied more Sanding sealer, sanded to 600 grit and about 4 coats on Melamine lacquer applied.

Again, this was another experimental project, from which I learnt quite a few things. The stick is extraordinarily strong in all aspects.

I like the challenge of working out different ways to hold projects on the lathe safely.

Like I said at the beginning I got the initial idea from a Swagger stick I saw on the Antiques Road Show. But the construction technique and everything else I came up with myself, but no doubt it has been done before the same way or a similar way. There is not much that new in woodturning.