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Cambium

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Guild Events

July 4 Guild Meeting – Turners Group

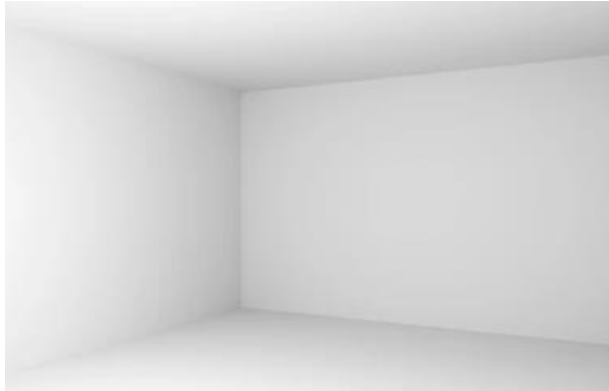
Aug 1 Guild Meeting – Carvers

Aug 23 -Sep 10 Odlins Exhibition

Sep 5 Guild Meeting – Fine Woodworking Group

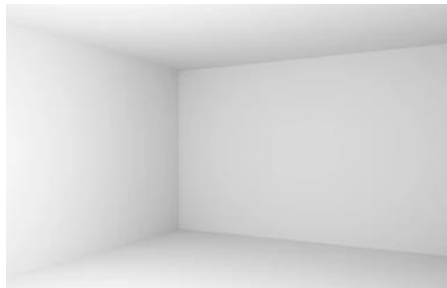
Oct – Nov **2024** Pataka

Presidents Corner



To be filled !

Vice Presidents corner...



Still to be filled.

Segmented Jewellery Box by Paul Dudding

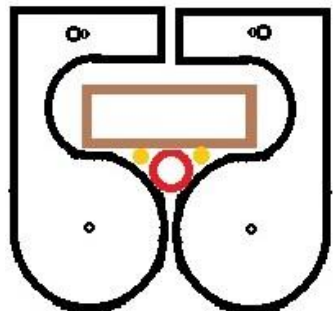
A friend sent me a photo of a rough segmented opening box, each segment rotating on an axle, its rotation limited by a peg in a groove. I looked at his photo and with the GWW competition in mind of 'an item, utilizing 3 different timbers, and able to fit within a 100 x 100 x 100mm cube' I decided that I could produce a finished box of a similar nature.

I did not have any detail about the layout of his design, all I had was the original photo. My intention was to use an old Totara peg that I had been given for the segments; I cleaned up the surface, machined flat with planer/jointer, ran it through the thicknesser and ended up with a 44 x 88 x 300mm piece of timber.

I needed to create 26 6mm thick slices, 13 for each side, enclosed by end plates of American Ash (offcuts of a table frame Nick provided) and containing a Rimu tray to hold jewellery. The end plates also providing a stable base for the box.

I needed to prototype the design, and, in the end, I worked through four prototypes before the end design.

The two main issues were where the axles should be located and the position and length of the groove for the peg, when opening it needs to push the segments back, but when closing pull the segments forward. After several prototypes, the 4mm peg hole and slightly overlapping offset 8mm groove hole gave a movement between each segment of only 6mm, for the central segment this gave a cumulative travel of 42mm when pulling the box open or close, and after several prototypes this was the final setup.



Making the pieces

Using a table saw sled, and a stop block, I made 26 6mm slices and a few spares, the variance between them needing to be minimal.

I wanted to book match the segments, so each piece was numbered. The centre segment had no groove but a peg protruding either side. In drilling the holes, I used a template and stop block, drilling all the holes for the axles (3mm), then the peg holes (4mm), both being on the centre line and both through the segments, then an offset to the right of centre, a 8mm hole but only 4mm deep. My drill press has minimal flex and I could set the depth then cycle though 12 segments, changing hole position when the offset needed to be left of centre for the 2nd 12 segments (no groove required in the centre segment)

The drilling guide had multiple purposes, it pinned down the thin segment evenly reducing stress, it confirmed that the positioning had not crept and importantly, when using thin drills like the 3 & 4mm, they tended to deflect depending on the hard / soft parts of the growth rings, the guide prevented that, as the whole design is extremely dependant on accurate positioning of the holes.

Of course, with a stop block and guide, any dust / debris must be removed before the next piece is positioned. The segment throats were cut open using a table saw (segments taped up as a single block) then as smaller taped up blocks using a bandsaw. The shape was trimmed to get close to the final shape and then sanded using jigs with the segment mounted on an axle. This process unfortunately resulted in a few breakages.



Hand sanding removed saw marks, smoothing the pieces so that they had minimal friction (120grit / 240 / 480), followed with a wax finish. The pegs were 4mm Rimu, 5mm long, half glued in a segment, the other half protruding and sliding within the groove of the neighbouring segment.

The end plates of American Ash were trued up, drilled with axle holes and grooves. The axle holes were 2mm higher than the segments, thus just lifting the assembled segments off the table when opening / closing.

Final assembly provided another challenge, the centre segments needed a small external dowel peg to open and close the box, and a magnet in the face to hold the box closed.

The axles were 2.75mm metal knitting needles, and the original intention to glue those into the end plates so that they held the box together, dry assembly showed they flexed too much and the idea of gluing the box together and achieving the right end to end tightness and preventing the glue up of the end segments led to a central dowel fixed through the length of the box and endplates, friction fitted at one end, that holds everything together yet allows slight adjustability to tightness of box.

The Rimu tray inside the box is a simple sided tray, just slightly shorter than the box, with two dowels underneath to keep it centralised within the box's curved surfaces, see the diagram above.

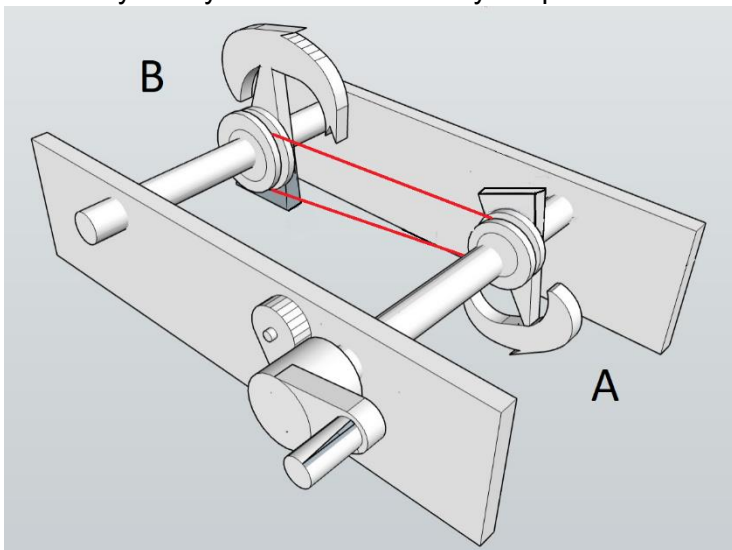


Work in Progress – part 3

In the last report, about the construction of an automaton, the mechanism for disengaging the electric motor from the axles was described, this enables manual rotation in the situation where there are flat batteries or mechanical malfunction. Now we move on to a set of moving parts that add 'life' to the automata.

The automaton is a seascape and in that seascape a couple of dolphins will be seen to leap out of the waves. It has been designed so that the two dolphins emerge from the waves at different frequencies.

Each dolphin has an associated pulley; pulley A being of a smaller diameter than B. This means that they rotate at different speeds but sometimes they will synchronise when they 'leap'.



The pulley and dolphin at A are fixed to the axle; not glued but pinned with a 2mm diameter kebab stick, this enables their removal or adjustment as required, the pulley and the dolphin are not glued together so that they can be moved to the front for the back of the frame. The pulley/dolphin complex B; they are glued together, and

they are free to revolve around the axle, being driven by an elastic band as shown in the diagram.
What's next? Probably the fitting of the waves and then a boat... Good things take time.

Michael Harrison

Manawatu



The Manawatu Expo 14 May

This photograph shows the Wellington table display. Many thanks to John Piper for the picture and for being the organiser this year. No prizes were won but it's the participation that counts.

The May Guild Competition

The requirements were that the completed item had to include three different kinds of wood and have dimensions no larger than 100mm x 100 x100.

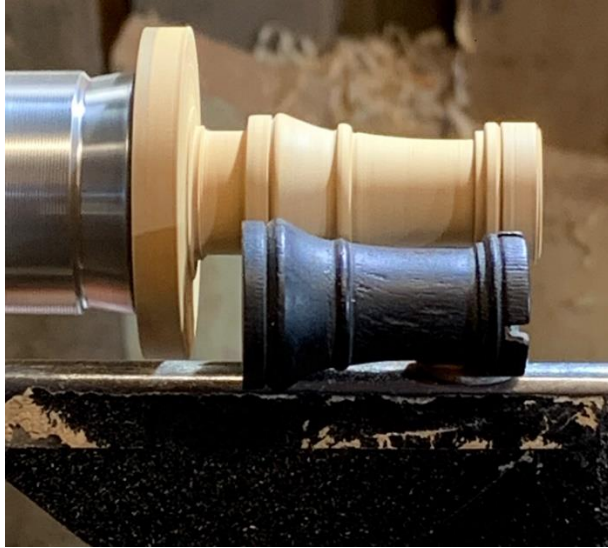
There were four entrants, Dougal Watson, Mark Wilkins, Nick Crocker and Paul Dudding with their creative entries. Details of Paul's segmented jewellery box can be seen on page 2.



Requests

On a regular basis the Guild gets requests for repairs or the making of items. One recent request was for the replacement of a missing rook from Justin's deceased father's chess set. Dougal Watson took up the challenge and using the existing rook as a template, made a replacement that matches perfectly. See the attached photos. The owner of the chess set was delighted and made a donation to the Guild in gratitude as it means a lot to their family. It was a really good outcome - thanks very much Dougal for taking on the challenge and doing such a great job. And thanks to all the Guild members who offered. It's great that members of the public are aware of the Guild

and ask for this kind of help - and even better that Guild members are so willing to respond.



Job in progress



Job done



Liam, a very satisfied customer with his grandfather's complete chess set.

