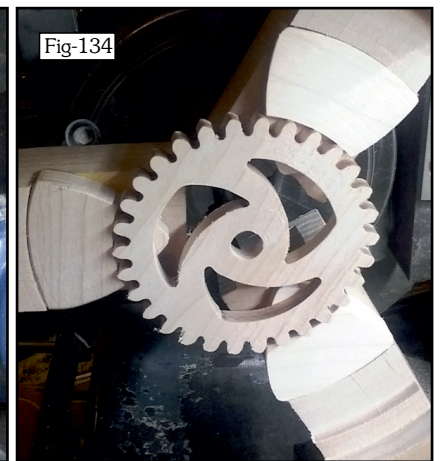


A busy and productive day which started with making another composite board as a blank for the last 64T and the first two 60T gears. Naturally, that had to be left on the clamps until the glue had cured so there was plenty of time to create the new drawing and G-Code. I soon realized that I'd forgotten to measure the width of the new board (the Maple off-cuts are not all the same width) so although I could place the outlines of the three gears roughly in position, I would have to wait until I could release it from the clamps before finalising the G-Code. Just as with the previous board, I'd decided to cut a 6mm wide clearance 'slot' but, knowing the mis-alignment issues I'd had, thought to create a 'test cut' only ½mm deep to make sure that I didn't need to stop the run and re-align after a deeper cut.

As expected, cutting the three 64T Gears out on the band-saw was easy, and left me with a clear means to grip them in Beech Jaws - Fig-132 is a photo taken after I'd started to cut away the excess - ie. I nearly forgot! - You can see that with the blank at 10mm thick and the gear outline being 8mm deep there is a 2mm 'slab' that has to be removed just to get the waste between the spokes out. Ultimately the thickness has to be reduced to 5mm and because these gears are cut from a half-lapped composite board that has to be done from both sides.



In Fig-133 you can see the 64T Gear still in the Beech jaws at the finished 5mm thick. Similarly, Fig-134 is the 30T Gear held in a smaller recess in the jaws.



## 26TH NOV

Although there has been a 4 day gap since my last comment, I've not been idle, it's a combination of other commitments and the fact that nothing had gone wrong and worthy of reporting - or so I thought!

Much of the time has been spent on repeating many of the tasks already mentioned but also further work on the rough-sawn Dial Blanks. Since these blanks will need work on both sides, it is imperative that they can be positioned accurately when 'flipped over' so the first thing I had to do was make a positioning jig - nothing extraordinary just a piece of 10mm ply screwed to the table and machined in position to provide constant X and Y axis end stops. There are 20 blanks in total and cleaning the surface by taking 0.5mm skims off each side until such time that all the saw marks were removed simply took what seemed forever.

Once they were all clean and finished at 6mm thickness, the ends also needed to be machined square. I had determined that they needed to be 233mm long but due to a couple not cleaning up at that they finished at 230mm - no real problem I thought, a little 'tight' but judicious positioning of the outline should sort that out. To make absolutely sure of that I set about printing 'life size' images of the five Dial sections so that I could easily check how much 'adjustment' might be needed.

Drawing sections A & B didn't cause me any concern but I was somewhat miffed when I looked at the overall length of section C and noticed that it was 242mm long..... again 'Measure twice, cut once' comes to mind but in this case that should be 'check all components twice!' Section D & E do not present a problem but another 'annoyance' is that I could, with a little forethought, easily have made the blank for 'E' shorter and 'C' longer. I now have to start from scratch to make 4 blanks for section C. :(

