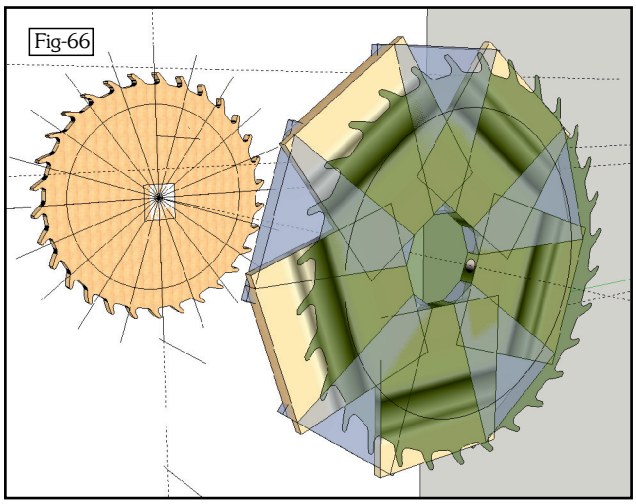
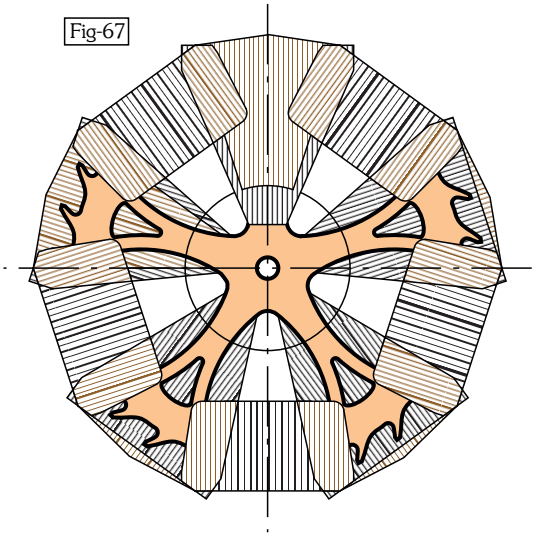
12th Oct

I've been putting off the preparation of the Gear Blanks for too long Waiting for inspiration to some extent and trying to persuade myself that trying to minimize waste could be a false economy (and I can't get to select the Walnut until Friday). I've already cut two pieces of Maple out of a 15mm thick billet that are really a bit too close to 5mm thick (the finished size) and all I have left is a 2-3mm sliver. The next strip I cut will be down the middle so there will be some 'meat' to provide an easy finish trim.

The Maple I have is 48mm wide and was bought with the intension of making up a 5 segment 'ring' plus a centre 'boss' - see Fig-37 in WIP-7 - but I now see that 48mm is insufficient to cover the 72° necessary to have the grain running in the correct direction (it would need to be 83mm wide) so today I did some more work in CorelDRAW! & SketchUp looking at a 10 segment option. This is on the Escape Wheel which is 120mm Ø - ie. the 'worst case' situation - the smaller gears won't be a problem. I also have Maple at 64mm wide but only 10mm thick which is OK for the 72 T gear which is 8mm thick (but will still need 6 or 8 segments).

Fig-66 is a screen-grab of the SketchUp image in which I'm testing how a 10 segment option would work and Fig-67 is the next iteration done in CorelDRAW! From that I can move the segments about to eventually create the .DXF file which will be used in CamBam to create the G-Code.

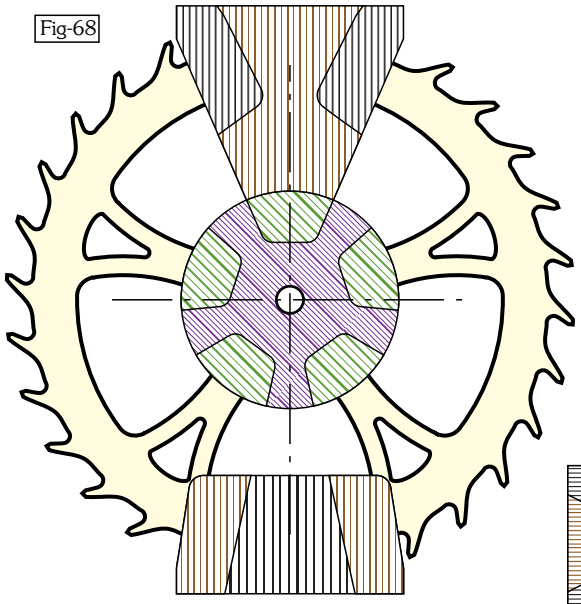




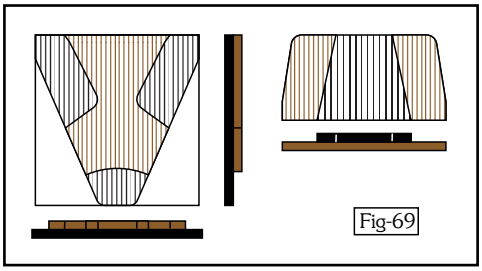
13th Oct

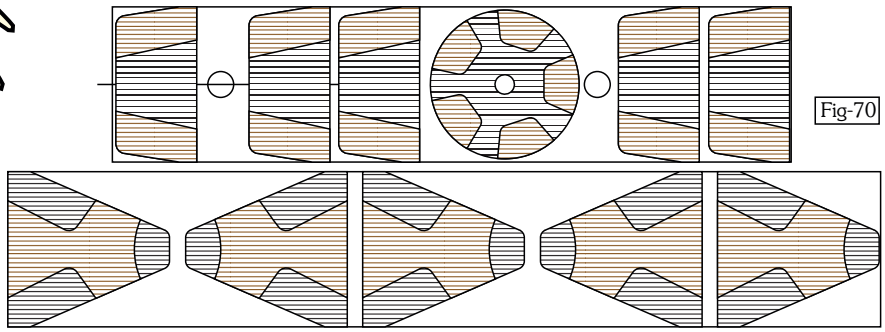
I've looked again at this problem so Fig-68 is the latest (hopefully the final) iteration, Naturally there will be only one centre but there will be 5 each of the other two. Making segmented components is usually just a matter of making 6/8/10/12 etc. pieces with the appropriate angle (60°/45°... etc.) and simply gluing them together with butt joints but for gears I need more strength so have designed half-lap joints. It makes the whole thing more complex but vastly superior.

Using Plywood would overcome all the issues of course but has the disadvantage of 'Appearance'.



The shape of the two different segments can be seen in both plan and elevation in fig-69. They will both be made using CNC and all 5 of each together from two blanks - see Fig-70





It's somewhat disturbing to realize that another day has come & gone and nothing material has come out of the workshop. A great deal has been done on the PC of course and all the G-Code has been produced so tomorrow I hope that I might have at least an Escape Wheel blank glued up ready for the outline teeth and spokes to be cut.