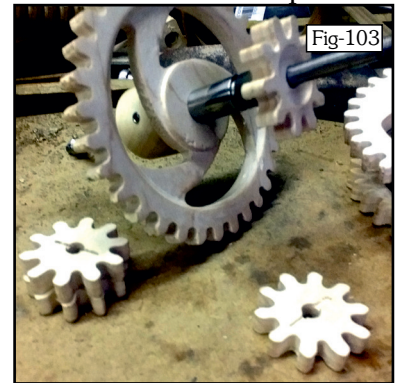


Once I'd finished the Rear Frame D struts it made sense (to me anyway) to work on the FRONT Frame D struts since they were already prepared by having the surfaces skimmed and they would be easier than those for the Rear Frame as the recess for the bearing is on the same side as the joint so there was no issue with re-positioning after turning over. It still took me the rest of the day to get just the one side done due to other commitments! — and even then I'm not satisfied with the result. You'll see in Fig-102 that I mis-judged the position of the blank on the Y axis by about 1mm. Fortunately the diameter of that section is not 'critical', 40mm was just a convenient number I came up with so I can quite easily create another MOP to cut it down to 38mm.



The only other part I've done any work on today is the 10T Pinions used in the Motion Works - the start of the train that takes the hour hand rotation and speeds it up to drive the minute hand - I thought I'd done all the work on these but I'd been less than explicit when I did the technical drawings and I mis-read a 12mm x 1mm [Slot] as a 12mm Ø [Recess] so that needed to be addressed. These 10T Pinions fit on the main spindle but in front of the frame and pass through a needle roller bearing. They are driven by a 1mm Ø pin which fits in a cross-drilled hole in the spindle — which I can't drill until such time as I have both Front & Back Frames fitted together — and that pin sits in the slot. The recess I cut in error won't matter because it will be behind a larger gear.



In Fig-103 you can see the slot in the stacked pinions and the recess in the pinion on the spindle. There is also a slot in the single pinion but it's difficult to see.

2ND NOV

Doing the 38mm Ø trim on the Front Frame D strut has taught me that I don't need to do both roughing and finishing cuts with the 2mm burr. You'll see in Fig-104 that the finish straight off the burr is very good indeed - though trying to photograph the 'ribbed' finish is not easy - this is on the straight sections which were cut with a 'finishing' cut of only 0.3mm but the main reason for the ribbing is down to taking a 4mm depth of cut. This would be fine if I were using a spiral flute cutter but I suspect that the 'burr' has a 1mm pitch and the 'teeth' are not cut on a helix so it is effectively a ribbed cutter. The trim to 38mm Ø on the round section was done with a 0.5mm depth of cut which I presume gets around the burr 'pitch'.



Now all the rear frame sections are cut out I spent the morning breaking away the waste, removing the holding tab left-overs and dry

assembling the parts to check that there are no major adjustments needed. I'm well pleased with what I found. The C & E struts all went together with just a little hand pressure. The D strut is an 'easy' fit and that is - if anything - a benefit since it will allow me some tolerance in the positioning of the winding spindle bearings which can only be finally fathomed when I have the two frames fully assembled and the main spindle in place. I've annotated Fig-105 to give you a better understanding of how I referenced the struts. I've also shown the frame with the brace made from Maple which again fits very snugly in place - ultimately it will be glued both to the rear frame and also to the spacing pillar at its foot which will hold the front & rear frames apart.

I did find one small error though. For some peculiar reason when I made the 'A' component I cut the main spindle bearing recess 8mm deep rather than 3mm ??? - 8mm is correct for the FRONT frame which has an 8mm long Needle Roller bearing but the Rear Frame has a 3mm thick deep groove ball bearing. This meant that I had to make some 8mm Ø x 5mm long plugs which I did from some of the Walnut scraps.

