

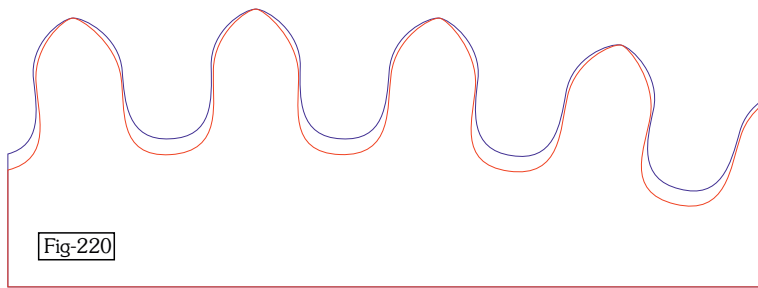
17TH - FEB

Though I haven't reported my activity for a fortnight, I've not been idle - though I have spent more time thinking than doing!

Yesterday I had the clock going for nearly 12 hours and it only stopped because the temporary weight reached the floor. Today - up to now - it has done nearly 10 hours so I'm satisfied that the changes I've made latterly have been useful.

The main change has been to the Winding Drum. My original design called for 25mm Ø but I've now made a secondary Drum 50mm Ø. My calculations show that this ought to provide twice the amount of torque to the Escapement Finger but will of course halve the time between winds - at least I have a working clock!

I also re-cut the 64T 2nd Train Gear - somewhat of a challenge since I had to very accurately re-mount it (them) on the Denford (sorry didn't take photo's) making sure that the teeth were correctly oriented. This entailed making a jig to screw into one of the locating screw inserts in the Denford table and four clamps to make sure there was no



movement. I only took off 0.2mm from each tooth flank but I also cut the root 0.5mm deeper.

The Red Line in Fig-220 is the new profile and the Blue Line is the original. I suspect that removing the 'bulge' in the addendum has had the most impact.

With the new profile, and the original 25mmØ Winding Drum, I was still getting less than 5 minutes run time with seemingly random stopping positions.

Now I have to turn my attention to the real 'Drive Weight'.

I had plucked 'about 2kg' out of the air as a starting point and with that in mind had determined to use steel inside a clear Acrylic tube. Now I've found that it really needs nearer 3kg - and I suspect that 5 or even 6 would have been necessary had I stuck to the smaller Winding Drum - I've been looking today at Lead Shot. As you may well understand, there are certain restrictions on the use of shot which is used mainly to fill shot-gun cartridges - or, in small amounts, for fishing weights. After some hours searching for 'sensible' sizes and prices it seemed unlikely that I could get the 12kg in good size shot --- I have learned a great deal about the way that shot is measured though :) --- one site even suggested that to use it for anything other than 'Fly' tying would be illegal ??

Eventually I came across a 'Sash Window Weight' available in 50mmØ, 600mm long with a 12mm bore and weighing 12.7kg at a little under £60 plus carriage (not determined). Further searching with this new possibility found one supplier at £51 delivered and another at £37 + carriage which I've asked them for.

This will be ideal since I won't have to drill an 8mmØ hole through 150mm of steel and one weight will give me enough for all four clocks. I'll still use the Acrylic Tube with Walnut caps to cover it and may even use 'Plasticote' to further encapsulate it, totally sealing it from any possibility of both tarnish and environmental hazard.

18TH - FEB

This morning I could determine how long the clock had gone for because naturally the weight had dropped to the floor and it was 21h 25m. This is with a drop of 1.3m whereas the design height should provide 1.5m, in which case I anticipate that I will get close to 25 hours. I can't yet fathom how this can be since my original calculations predicted 26 hours but I thought that doubling the diameter of the Winding Drum would halve the run time - I'll have to do some more calculations!

Yesterday I was using a Weight of 3.048kg made up of a water bottle + a lump of steel and had also added an extra weight to the Pendulum Bob but in an attempt to remove some of the 'trial adjustments' today I took both of the extra steel lumps off and it looks as though it will work with a 2.2kg weight. I re-started it at 10am, it's still going and I've just checked and it shows 13:15 which is 5 minutes slow. I know that the Pendulum is too long because I have used a full 1m length of carbon fibre tube for the Rod but at least I now do have a 'benchmark' for proper adjustment. It's a pity that I can only test modifications in 'Real Time'.

The Lead Weight has been ordered and will be with me tomorrow so I can get on with making the other parts.