

5TH - FEB

As suggested by Brian, I made a point of testing the 'free-flow' of each pair of Gears/Pinions by applying as little pressure on the gear to just make them move and therefore to see if there were any further 'high spots' which would be likely to need more torque to overcome the resistance. As I found them, I marked the teeth with a pencil and judiciously trimmed the flanks until such time as I had a full rotation with no binding.

Spent most of the day either making very small adjustments to either the Pendulum Pivot height, yet more judicious trimming of the tooth flanks or simply pondering over what else might be inhibiting more than a couple of minutes continuous run.

Finally gave up and got on with 'life' :(

6TH - FEB

First thing I did today was check the Pendulum Pivot height and a very small adjustment seemed to show that the clock would run for over 20 minutes (using a 2kg weight) **IF** I constantly made sure that the Latch remained in position - that is centred over the Latch Lift. There was a tendency for it to move backwards and eventually get out of the reach of the Lift.

The Latch is constrained on a 2mm pin with a friction fit Acetal ring acting as a retainer but it obviously has to be totally free to move on its 2mm Ø Pivot Pin so the hole is 2.1mm. The Pin is held in the support by friction since the hole was drilled at 1.9mm but if the hole is even marginally out of square then there will be a natural equilibrium pushing the tip of the Latch out of position. This 'tendency' can be eliminated by a small re-alignment of the pin which is what I did with a pair of Pliers!

Of course this meant that I had to dismantle the clock again so whilst it was dis-assembled I took the opportunity to make other adjustments. I particular I took a further 1mm from the shoulder of the Escape Wheel Spindle giving yet more clearance between it and the Latch Support and better aligning the Latch with the centre-line of the Escape Wheel. I also sanded the flanks of the teeth on the Second Train Gear both sides which - since I'm using 1000g abrasive - is effectively polishing them but doing the same to the mating Pinion is very difficult because that is glued in place such that there is only about 10mm space so I can't do it with the 50mm Ø disc. ---- I think I'll have to make a small round abrasive 'stick' that will fit the Dremel.

Before that, I re-built the Clock, hoping that I would see at least 20-30 minutes running ---- No more than 2 :(---
- even after re-tweaking the Pendulum Pivot height.

It seems that the 2kg weight is insufficient but when the bottle with 3kg fell to the floor, it ruptured and I don't have another bottle large enough.

When it stops, the Pendulum is still swinging for some time but the Escape Wheel is stationary so that indicates that there is still some binding between the Gears/Pinions so 'polishing the Pinions' could well prove to be the answer. It may also be that the Main Drive Gear and the First Train Gear that is driven by it needs 'polishing'.....

After yet another strip-down, 'fettle' & re-build I still can't get a regular long run :(I did have one session approaching 30 minutes but most trials ran between 1 & 8 minutes but the biggest disappointment is that there is no consistency. I've done tests with and without the Pendulum 'Bob' - just using the brass adjusting screw to provide some weight. This effectively shortens the Pendulum length to well below the 1 metre but I wanted to know if the weight of the 'Bob' was too great (it may not be), and I've also added a lump of steel weighing 1kg to the Weight making it 3kg overall.

I was able to take a Video lasting nearly 3 minutes (it can't be added to the .PDF of course) but I had to install a Video Editing program to turn it through 90°. Due to its size I then had to trim it so there is just one minute.