Almondsbury Clock

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Based on a series of articles published in The Lich Gate, the Almondsbury parish magazine.

Part 1 - Clock restoration

The hands are off and work has started. Once the hands were removed the motion works could be withdrawn and sent to Timsbury Clocks for repair and restoration. Symon, the horologist stopped the clock (so to speak) December 2019 but couldn't start the repair work until the necessary approvals were obtained.

Unfortunately, Covid and the lockdowns got in the way of progress. We finally got the approval at the end of November 2020.

Problems with the clock had been dragging on since the summer of 2019. The clock kept stopping. It would run for a few days then stop. Days became hours then minutes. In the end we realised that the clock itself was fine but the drive to the hands was at fault but couldn't pin down exactly where.

As soon as the drive was disconnected the clock kept going and has done so ever since. It's been striking on the tenor all the hours of day and night since then. A second opinion was called for and the Bath & Wells Diocesan clock expert came just after Christmas 2019. He approved the diagnosis as well as

adding some extras. The necessary paperwork was drawn up and submitted at the end of January 2020 then Covid & lockdown.

The picture below shows the motion works in-situ inside the belfry at the back of the clock face. The counterbalance for the minute hand is the long rod with the lump at the end. The pronged thing to its left is the disconnected drive from the clock in the ringing room below.

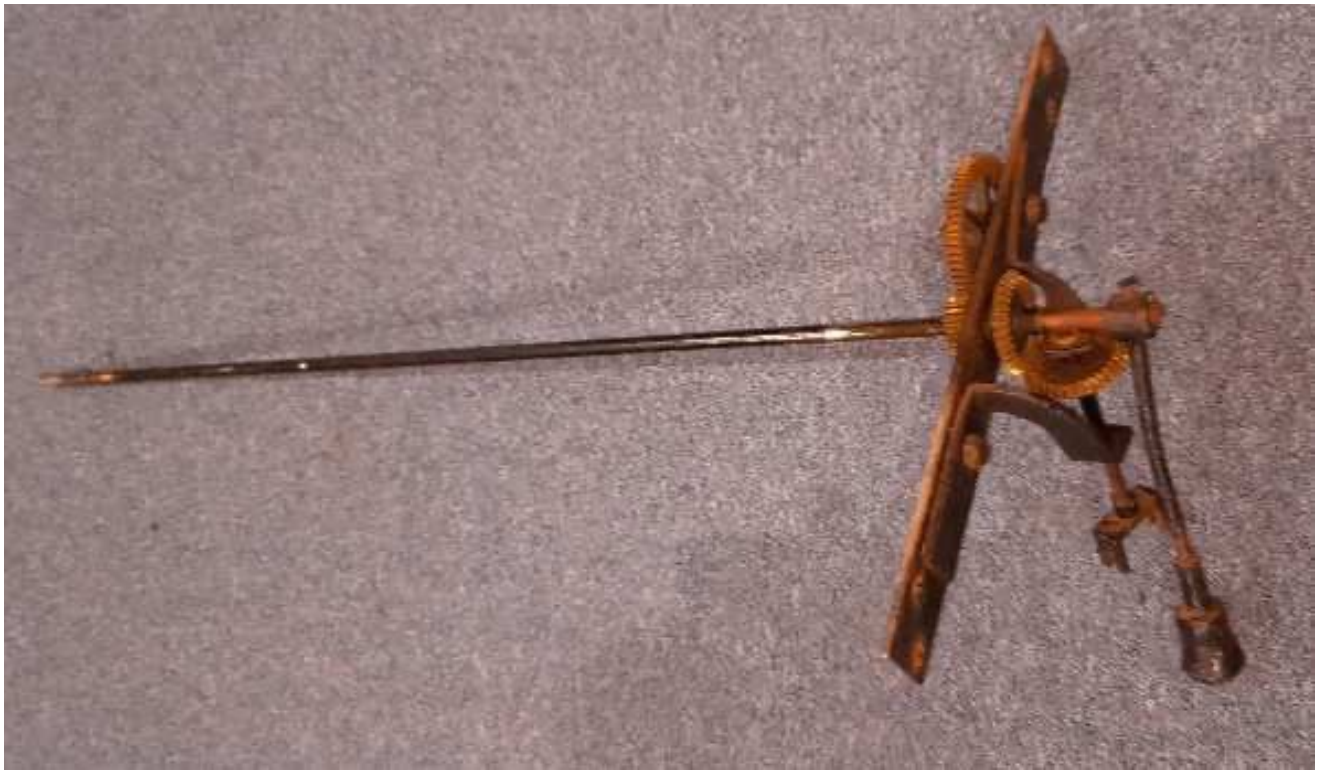
This is the most neglected part of the clock mechanism according to the Bath & Wells DAC clock expert.

What does the motion works do you may well ask? Well it comprises the gears which divide the single drive from the clock into minutes and hours and connects to the hands to show you the time. We think the motion works was installed in the belfry when the clock dial was put on the tower sometime

during the reign of queen Victoria. Apart from the odd bit of lubrication during the maintenance it has never been taken out and cleaned.

Picture above shows the hour tube with pinion (gear) wheel and hour hand counterbalance.

Picture below shows minute hand arbor rod with mounting bracket.



Part 2 - Reassembly

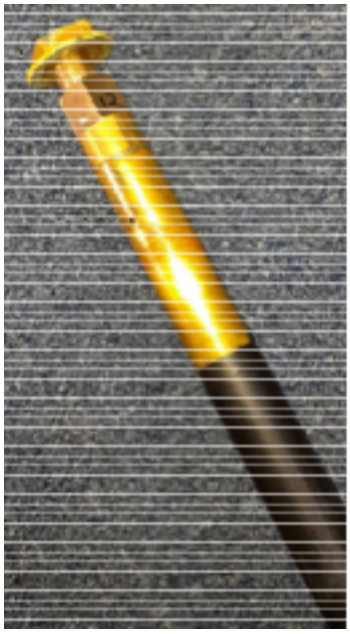
Carry on Almondsbury! The hands are back and the clock is telling the time again. After a stuttering start but never the less, working. Its been so long that the clock hasn't had to drive the hands around the clock face that it seems to have almost forgotten how to do it.

Motion works repaired and restored

Once the hour tube and minute arbor rod assembly were reinstalled the hands could be fitted back onto the face of the clock. As soon as the green light of approval from the authorities was given, Symon Boyd of Timsbury Clocks wasted no time in taking the parts away, doing what was necessary to clean, repair, restore, paint and bring them back, to enable the hands to be on the clockface once more.

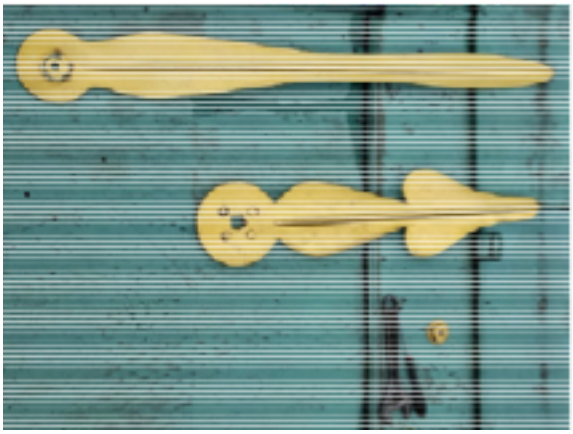
The picture below shows the restored motion works assembled and ready to be installed behind the clockface. The counterbalance weight for the minute hand is the long black rod with the lump on the end dropping down in the foreground. The pronged thing to its left is the connector for the drive from the clock in the ringing room. The other shorter rod further along the black tube with the lump on the end is the hour hand counterbalance weight.

The picture below shows the other end of the motion works with the square end of the hour tube to which the hour hand will be fitted and the smaller diameter rod of the minute arbor rod protruding through it, to which the minute hand will be secured by the threaded locking disc shown on the end.



The picture on the left shows the motion works in situ with drive shaft connected coming up from the clock at the bottom, the minute hand counterbalance pointing to the left. The hour hand counterbalance is obscured by the old timber support.

The picture below shows the hour and minute hands waiting to be fitted. These are made of copper and gilded with 24 carat gold leaf to withstand the weather. The overall length's are 850 and 570mm respectively.



Part 3 - Almondsbury Tower Clock Problems

First problem

The bevel gear indicated above has 2 grub screws. One of them has stripped its thread in the bevel gear boss and is not holding. The other is about to fail and cannot be fully tightened to secure the bevel gear to the shaft. This means that from time to time the dial minute hand on the clock face gets out of synch with the clock movement which tends to show the clock as running a few minutes slow even though it strikes the hour on time. This can be caused by strong gusts of wind slowing down the large minute and hour hands on the North facing clock dial also when the clock is adjusted for timekeeping.

Remedy

The proposal is to remove the lead-off bracket along with the faulty bevel gear from the clock movement. This will entail disconnecting the lead-off drive rod from the constant velocity joint and removing the bevel gear, its shaft, along with the bracket assembly to the horologist's workshop where the bevel gear boss will be machined to remove the grub screws and stripped threads and to machine and fit a fixed pin through the boss and shaft. The bracket will then be refitted to the clock movement with the modified bevel gear and its shaft. The clock will be adjusted and checked to ensure that the movement is running correctly. This work will secure the bevel gear directly to the shaft and remove any future slippage through this part of the mechanism.

Another problem

The horologist has identified another source of weakness in the running of the going mechanism which can lead to erratic time keeping. The clock mechanism is securely mounted on a welded steel angle iron frame. However, the frame is not secured to the wall of the tower. This renders the structure liable to movement and can lead to the clock running slow or fast brought about by slight movements of the frame caused by ringing of the bells, drafts when the external ringing room door is opened and closed, and other conditions which impact on the period of the large pendulum's movement and other parts of the mechanism.

Remedy

The horologist proposes to fabricate some steel brackets which will be fitted to the angle iron support frame and securely fixed to the tower wall.