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# Tavern Clock Troubles

*A Rare Repair*

John Reynolds FBHI



with Robert Ovens MBHI



We meet many different clocks in the course of our work as restorers, and sooner or later everyone will come across something different. For instance, tavern clocks are rare compared with longcase ones, and many of us will not have had the experiences of repairing a tavern movement. At first sight, they may seem very simple. Unfortunately, this apparent simplicity coupled with their age means that many have suffered from poor repairs, had their weight increased to keep them running when they actually needed fixing, or even had their movements changed. These clocks are very valuable and must be repaired appropriately, otherwise the knowledgeable owner will not be too pleased.

Some tavern clock movements are poor from the start, having been made using parts which are more suited to longcase clocks. For example, when the centre arbor and hour pipe are too short to pass right through the wooden dial, it has been necessary to carve out a recess for the motion work. On the other hand, the best movements are well designed, often with small diameter grooved barrels. This results in a short weight fall in a case whose trunk is only a little longer than the pendulum. The smallest barrel I have encountered was only  $\frac{7}{8}$ in in diameter. Some have an intermediate wheel to achieve the short weight fall, making a five-wheel train, whilst others have the standard four-wheel train with a small barrel and a fairly large greatwheel. The four-wheel clocks are sometimes referred to as 'Norwich' type, often having a smaller dial.

The going periods of tavern clocks can be anything between five and eight days. (Problems have been caused when a buyer assumes it is eight days without checking when the clock is being advertised.) Some tavern clock owners



Figure 1. The restored Christopher Tucker tavern clock.

have kept their clocks in the 'as found' state, retaining all changes and poor repairs from the past. Others have had the cases restored and the movements returned to something like their original condition so that they have reliable and presentable clocks in their homes. Apart from a thorough service, this often leads to new parts having to be made if the job is to be carried out to their satisfaction. The movement of the tavern clock by Christopher (XTopr) Tucker of London, **Figure 1**, which I repaired for Martin Gatto, is a good example of this.

In his book *Watchmakers and Clockmakers of the World* (NAG Press, 2006), Brian Loomes records that Christopher Tucker was working from before 1726 to 1760. His will, **Figure 2**, in The National Archives, dated 18 January 1745, confirms that he was a watchmaker of Saint Margaret, Westminster.<sup>1</sup> The use of X as an abbreviation for Christ is often found in early documents, but is rarely seen on clocks. This is the only known tavern clock by Christopher Tucker. At some time during the nineteenth century, it hung in the Hotel a la Tete d'Or in Ypres, Belgium.

Close inspection of the movement revealed that the intermediate wheel and pinion had issues. The wheel, **Figure 3**, was a badly made replacement. From its colour, it seemed to be more like bronze than brass and the teeth of the large 20-leaf brass pinion had been filed to try to remove pockets of wear, **Figure 4**. Both needed replacing for the clock to be a reliable timekeeper.

Firstly, I made a new brass pinion to the same module as the greatwheel. Then my attention turned to the 60-tooth intermediate wheel. Examination revealed that it had been cut using an under-size cutter, as the teeth were wide and the spaces were narrow. I calculated that the module was just about 0.8. In the movement, it engaged with the eight-leaf pinion of the centre arbor, but I could see that this was certainly not the same module.

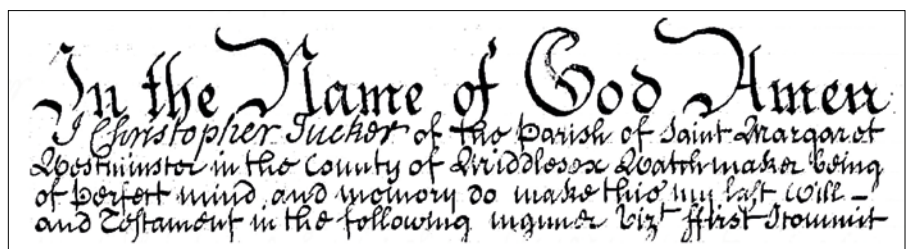


Figure 2. From a transcription of the will of Christopher Tucker. ©TNA PROB 11/737/220.



Figure 3. The original badly made intermediate wheel.



Figure 4. The original 20-leaf pinion with filed teeth and pockets of wear.

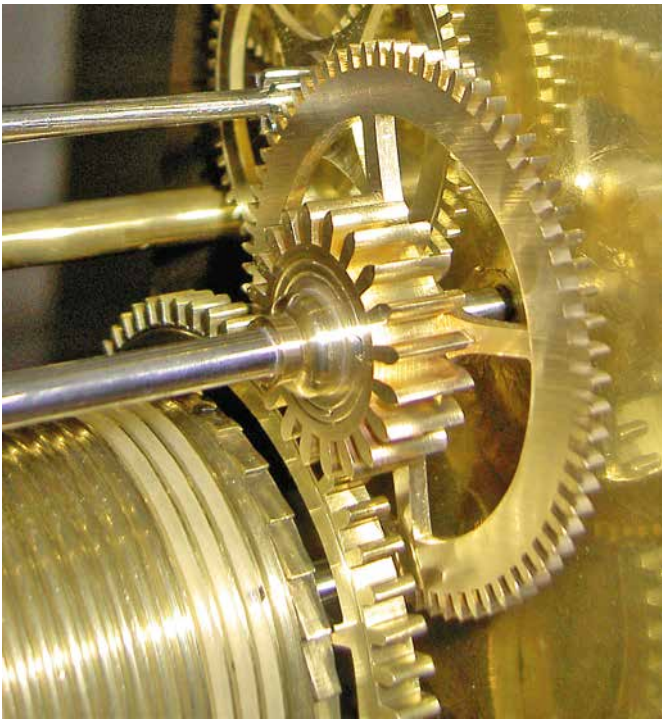


Figure 5. The new 20-leaf pinion and intermediate wheel.

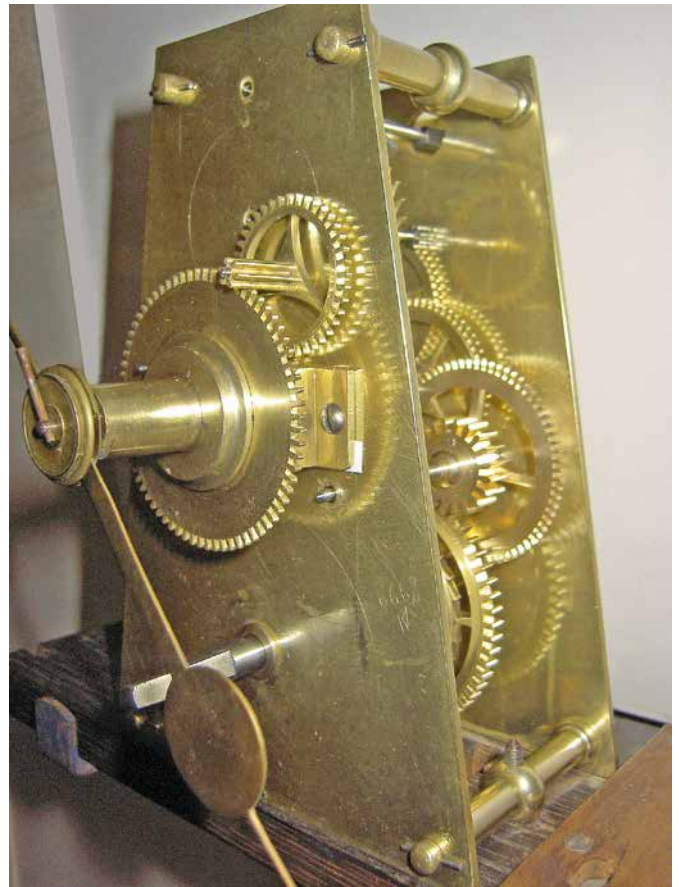


Figure 6. The restored movement.

My instinct was correct because when I measured it, it worked out to be 0.7 module. Simple logic told me that it must be the replacement wheel that was wrong, and for all I know it may have come from another clock or other clockwork mechanism. Not having the original wheel can be a dilemma, but in this case, I calculated that a new 72 tooth intermediate wheel of 0.7 module would maintain the centre distance and hopefully solve this problem.

I mounted the new wheel and the new pinion on the original arbor, **Figure 5**, and checked the depth to the greatwheel and to the centre arbor pinion. All seemed satisfactory and the train ran very smoothly. After re-facing the pallets, bushing the escape wheel arbor and cleaning, the clock ran on test with a nine-pound weight and a good

recoil. The original weight was about 16lbs. The weight drop is now a bit less, which may be an advantage in the case of a tavern clock and the replacement wheelwork has contributed to a lighter weight, a definite blessing for a tavern clock.

When a repair like this is carried out, the best advice is to be aware that what is in front of you may not be original – always do your sums! **Figure 6** shows the movement reassembled after repair.

Anyone interested in tavern clocks will benefit from reading *English Dial Clocks* by Ron Rose (ACC Art Books) and *The Tavern Clock* by Martin

Gatto (Tavernicus Publishing). Both are an interesting read.

Images and details of tavern clocks can also be seen on Martin Gatto's website (<http://www.tavernicus.co.uk>) and details of the case restoration of the Christopher Tucker clock are included in the gallery section.

#### ENDNOTE

1. The National Archives reference PROB 11/737/220. The records in series PROB 11 are Prerogative Court of Canterbury wills made between 1384 and 1858. They are copies of the original probates transcribed by clerks at the church courts.