

Picture Gallery

Turret clock by James Harrison of Hull, 1845

In the September 2015 issue we published a review of Chris McKay's book *Longitude's Legacy. James Harrison of Hull 1792–1875*:

Turret Clockmaker. The Last of the Harrison Clockmakers. The photos in this Picture Gallery show the clock that he supplied in 1845 for the newly built St Peter's Church in the North Yorkshire village Coniston Cold. The photos were taken by Steve Thomas whilst the clock was being refurbished at the Cumbria Clock Company. The captions were kindly supplied by Chris McKay.

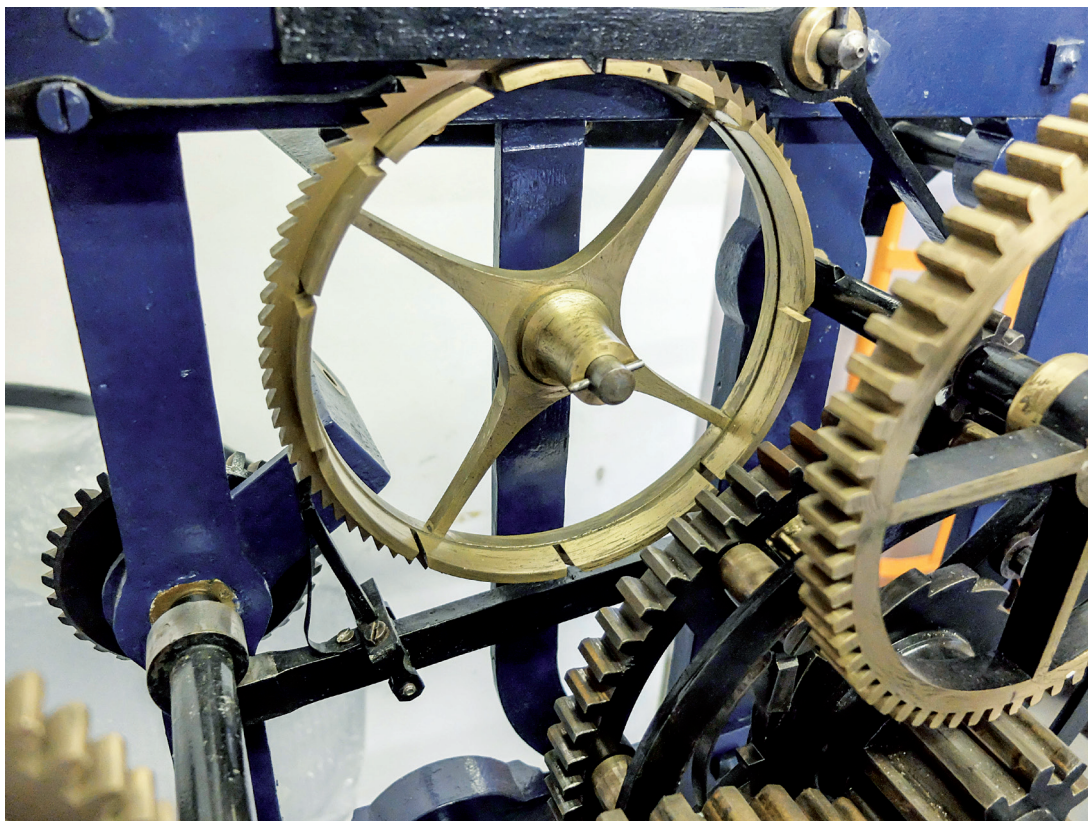


James 4 developed a standard layout for his clocks adopting the plate and spacer design. His larger clocks had integral legs so doing away with the need for a wooden stand. The going train is on the left and has Harrison's detached escapement. To the right is the striking train. Removable train bars allow for servicing, but it is a major task to split the plates to remove the barrels. In the past there had been a problem with this clock 'running through', there being no fly and the escape wheel had worn so sometimes it did not lock properly. Note the wooden disk on the escape wheel arbor. This was added by Fred Dibnah in an attempt to stop the clock running away.



Cast iron was used extensively by James 4 in his clocks for the frames, train bars and great wheels. He later used cast iron skeleton dials. The pendulum bob is under the clock to the left, the clock beats 2 seconds and the semi arc is large, about 5 degrees.

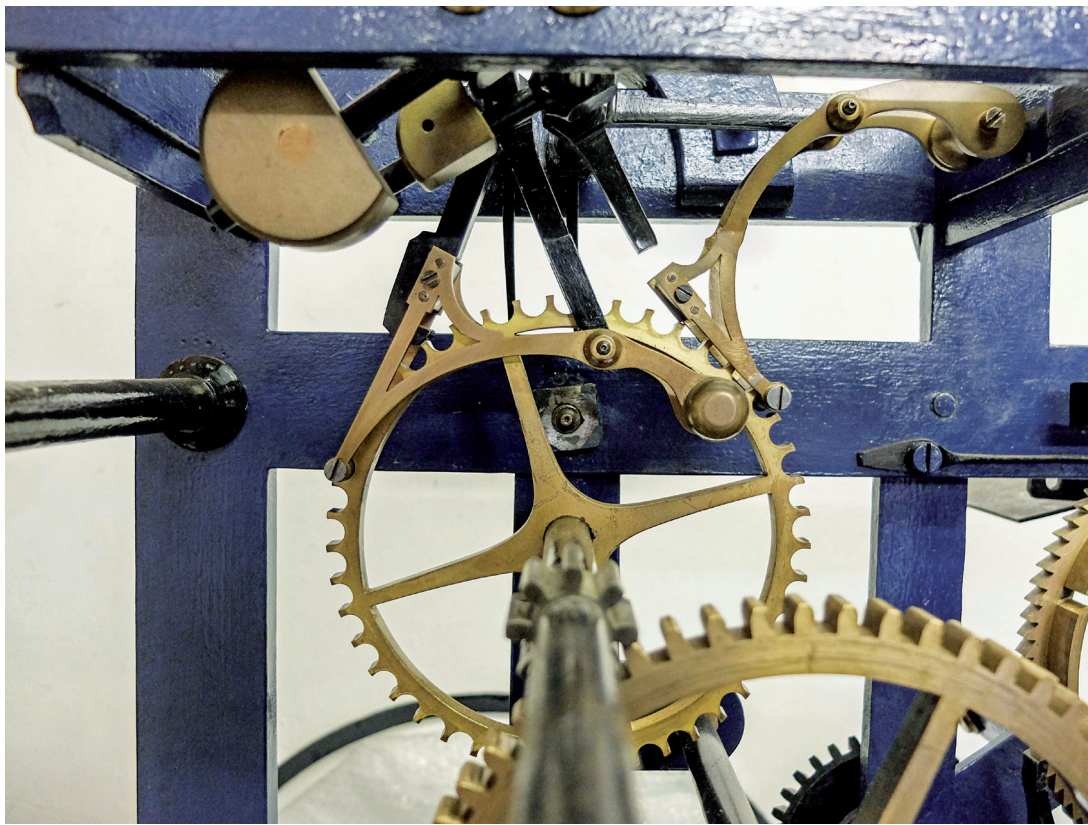
Regulation is achieved from the top of the pendulum. A hand nut raises or lowers the pendulum, the suspension spring slides through a fixed slot. Note the peculiar hollow cone centres that are a hallmark of Harrison's turned work.





James 4 arranged cleverly winding reduction by winding on the second wheel arbor. Note also one of the brass rollers that lifts the striking hammer and the clicks on the second wheel. His tooth form was near involute with a very stubby form and little addenda. James 3 left a good description of how his wheels were cut.

(left) Striking control is by a count wheel. This has a locking piece at the top, the tail of which engages with a flag on the fly arbor. There is no warning, the cam on the centre arbor (bottom left) raises the weighted lever. When the lever drops off the cam the count wheel is forced forward by a ratchet, the striking train is unlocked and thus runs. A gathering pallet advances the count wheel one tooth per blow struck until the locking lever falls back into a notch.



The detached escapement is really a gravity escapement, not a grasshopper as it might seem on first glance. In operation each pivoted two-part pallet is raised into its closed position by the locking escape wheel. On unlocking the pallet gives impulse to the pendulum by hinging into its open position.

All of James 4's clocks that have the detached escapement have finely engraved setting dials. Those after his father's death in 1834 claim the invention for James 4.