

## THE BRINKLEY TURRET CLOCK

Report kindly provided after thorough inspection, by John Woollard of Huntingdon.

The term 'Turret Cock' is used to describe the type of mechanism installed in churches and other public places between its introduction in the 14th century until the advent of the electric motor during the early 1900s. These clocks gave out their message by turning a hand or hands around an external dial, or by causing a hammer to strike, a bell, or by performing both actions. These clocks were usually of simple design and crude construction. Apart from a few notable exceptions, they were put together by local blacksmiths. The standard of timekeeping was poor, which is probably why they did not always bother to fit a dial. (When there were no trains to catch nor T.V.s to switch on, a bell striking the hours on time was near enough). The driving power was obtained from heavy weights, which had to be wound up daily (This would account for the extremely worn condition of the Brinkley tower staircase up to the first floor, rebuilt in the 1990's).

The Brinkley Turret Clock, on first sight, appears to have been changed only slightly in construction between say 1350 and 1700. On closer inspection, it appears that the shape of the gearwheel teeth became sharper, and the iron frame had a better standard of finish. The tops and bottoms of the corner posts developed modest wrought decoration. However, the affinity to the agricultural remained in evidence.

The one important feature which changed during the 17th Century was the escapement: this, being the means by which the speed of running, and thence the accuracy of timekeeping was determined. Early clocks used a device called FOLIET. This consisted of a vertical spindle, having two pallets ( blades ) which alternately engaged with the teeth on the side of a contrate wheel (a gear wheel having its teeth on its edge, and at right angles to the usual arrangement ) The angle of the pallets and the special shaping of the teeth caused the vertical spindle to swing first one way and then the other. At the top of this spindle was an horizontal arm, and at either end of the arm a small hanging weight. Changing the size of these weights, or adjusting their distance from the centre, allowed the arm to oscillate faster or slower to control the speed.

Around 1650 the pendulum escapement was inverted: the pallet staff and contrate wheel were little changed, except that the spindle became horizontally mounted. The speed of oscillation was controlled by a swinging pendulum with a moveable weight to adjust speed. Although used widely in domestic clocks, it seems to have been largely used by turret clock makers, possibly because the necessarily wide pendulum swing was not easily accommodated. Later, in the 17th century, the anchor escapement was introduced - so named because the escape wheel had its teeth on the rim, and the pallets with which it engaged were mounted on an anchor-shaped arm. The pendulum had a relatively small angle of swing, and could be longer than the verge type. The extra length gave a slower swing and therefore a longer running time for the same amount of laborious winding. It also gave greatly improved timekeeping.

The BRINKLEY TURRET CLOCK is not easy to date, as it incorporates features which individually appear to be contemporary with clocks of known age, ranging between 1386 and 1700. If we start by examining the escapement, we can see that the shape of the anchor itself is of a shape found in domestic clocks prior to 1700. The escape wheel is very crudely fashioned from a solid disc of beaten brass, whereas it should be 'crossed out ', i.e., made as light as possible by the removal of as much metal as can be spared without too much reduction in strength. Bearing in mind that the whole mechanism stops and restarts for each swing of the pendulum, it can be readily understood that the lighter the wheels the easier it is for the clock to keep going. This solid wheel is almost certainly much more recent than the anchor. The frame components around the escapement have 'spare' holes, and their positioning coincides exactly with the places in which one would expect the foliot components to have been fitted.

The frame corner posts have restrained decoration at top and bottom, which suggests 15th or 16th century. Some of the pinions (or cogs) are of lantern style, i.e. an arrangement of short rods, making an open cylinder contained between disc and plates. The decorative touches must have been an indication of pride in workmanship, because, once installed high in a gloomy tower, they would only have been seen - dimly - by the poor old clock winder on his daily visit. At some time, this particular clock has had two of its top corner posts cut off, perhaps to enable it to fit into a niche for which it was not designed.

At the outer end of each rope drum spindle, is a tapered square onto which the winding handle would have fitted. The adjacent (later) winder spindle was probably added to give the winder a 'bottom gear' to counter advancing years and declining strength.

The authentication of individual docks is helped enormously by reference to old records, which often give details, such as repair bills and wages to the winder. Without these back-ups, the dating of the BRINKLEY CLOCK can only be an 'educated guess'. On the evidence available, the writer's suggestion would lie within twenty years either side of 1550. Whatever the true date, BRINKLEY has an IMPORTANT EXAMPLE OF EARLY BRITISH HOROLOGY, and it is to be hoped that future generations will continue to preserve it with the same care as at present.

*Signed J. H. Woollard. 1992*

NOTE. The old Brinkley clock was found IN PIECES in the late Arthur Hart's barn by the then Church Warden - Richard Turner - who assembled the spindles and cogs and hunted around for any seemingly missing parts. This was shortly before Mr. & Mrs. David Smith became the owners of that property in 1967.