MINIATURE FLEMISH
Part 2 of 2: Th

Figure 17. The four wheels of the going train (top) and the special motionwork (below).

Figure 19. Greatwheel with b

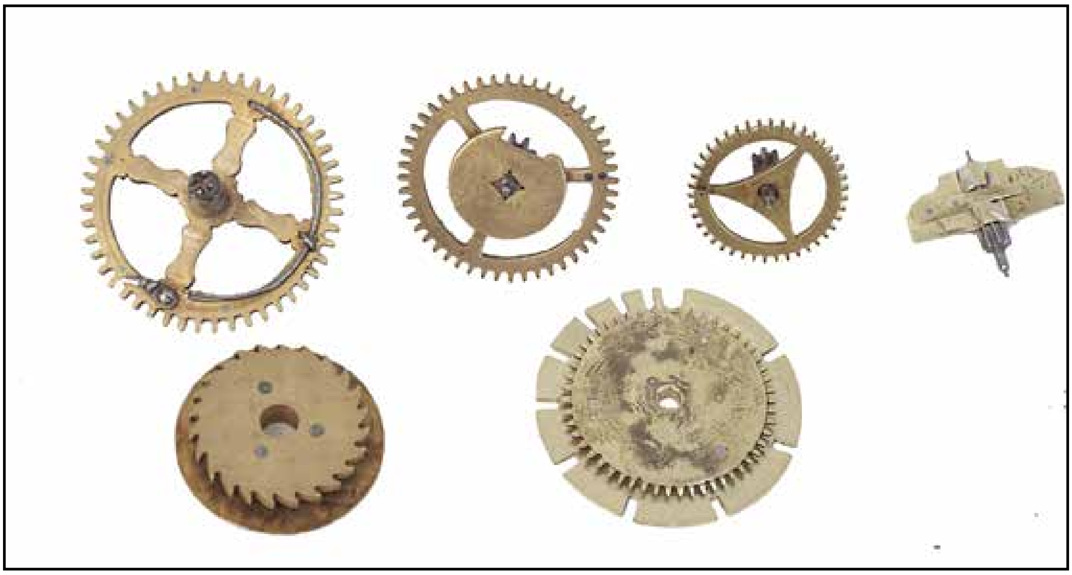


Figure 18. Striking train, rope pulley and countwheel.

Figure 20. Second wheel of t

Having described the very special and unusual dial, frame and movement bars of the miniature Flemish clock, attention is now directed at its movement. Since there is a verge escapement with a short pendulum, there are four wheels in the going train, instead of just three wheels for an anchor escapement, the extra one being a contrate wheel to drive the horizontal crownwheel.

While the going train is quite conventional, **figure 17**, that is not the case with the motionwork. On an English single-handed clock the starwheel is fixed to the hand arbor with the hour wheel sitting in front, the two being held together by a friction spring to allow the hand to be set to the correct time. On this clock an 84-tooth click wheel is riveted behind the starwheel, with a click and its spring attached to the hour wheel, which is at the rear. The hand and starwheel are on a short brass pipe that rotates on an iron post, this being a common Continental arrangement. The click wheel allows the hand to be moved in steps of 0.7 minutes, which was probably determined by the counts available on the clockmaker's dividing plate. An advantage is that the hand cannot be turned backwards, which could cause problems with the strike let-off. While this click system is certainly unusual, it is known on a French clock of about the same period (see *Clocks,* July 2016, pages 26-32) and on an Italian timepiece dated 1758, for setting an alarm hand (see *Clocks*, October 2014, pages 17-22).

H LANTERN CLOCK
ne movement

aluster crossings.*

he going train with a baluster arbor.

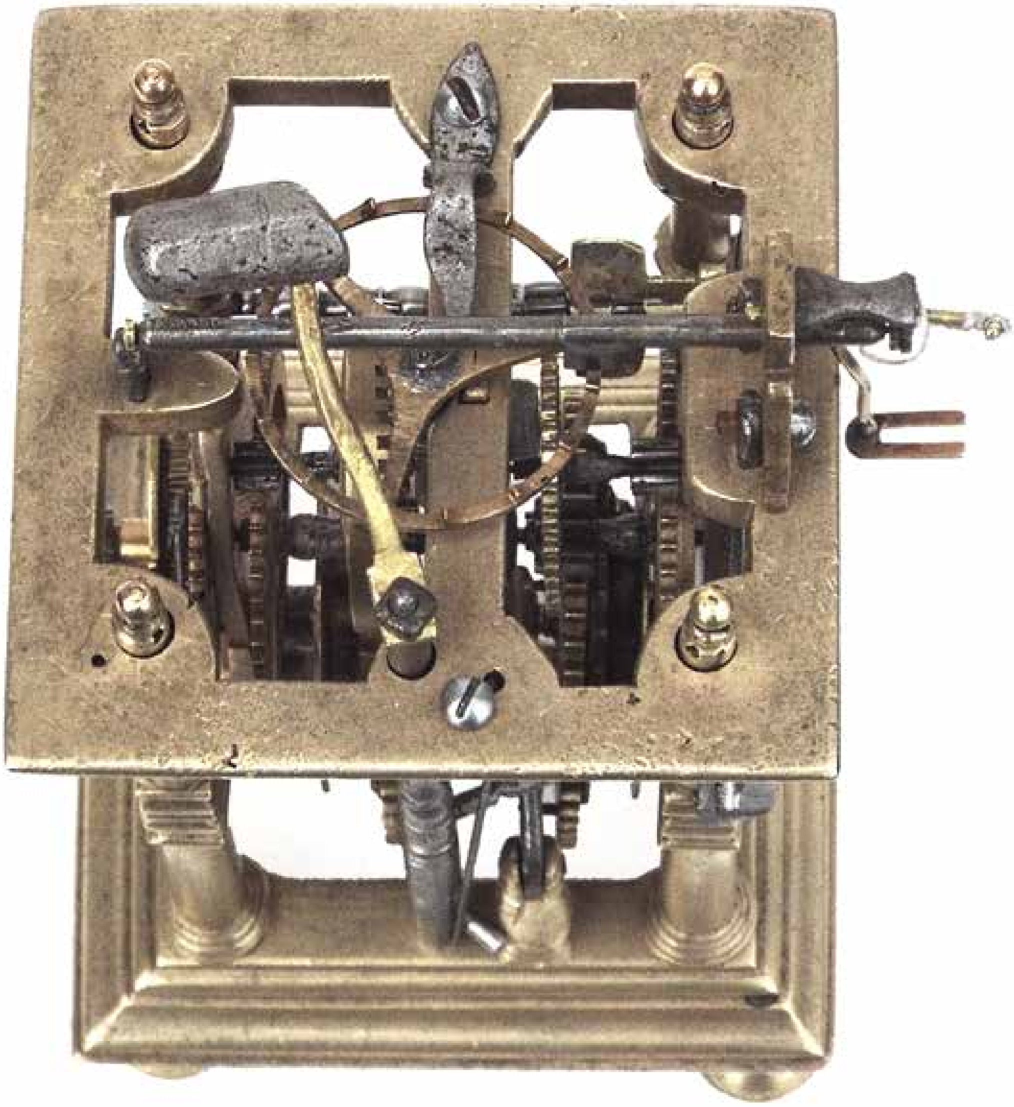
Figure 21. The verge, cocks and pendulum.

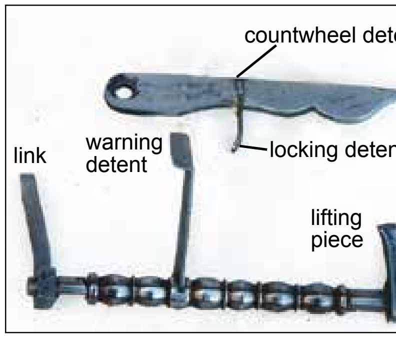
The striking train is conventional apart from a notched disc on the second arbor to lock the strike, **figure 18**, instead of a hoop wheel as found on English and many French clocks with countwheel striking. The wheel counts and dimensions are given in the panel on page 28.

Other features that are common to both trains include the very small four-pronged pinions-of-report. Also the greatwheels have four crossings, which have a baluster shape, **figure 19**, while the other train wheels have three crossings. The arbors are quite short and some have a baluster shape, **figure 20**. Each spiked rope pulley has ratchet teeth cut into its thicker inner side, with a click and spring on the greatwheel. This system, is much superior to the crude circular spring clicks used on conventional lantern clocks and 30-hour clocks, that can cause considerable wear on the crossings of the greatwheels.

The lower end of the crownwheel arbor of the verge escapement pivots in the usual potence fixed to the front of the central movement bar, and is supported at the top by an iron cock screwed to the frame. The verge itself pivots in a small vertical iron cock riveted into the frame at the front, and in a brass back-cock screwed to two iron posts, which are also riveted into the frame. The pivot holes in both cocks have been raised up, so that with longer pallets the pendulum swing is reduced.

There is a typical French type of pendulum, suspended by a thread (ideally of silk) and linked to the verge by a crutch. The pendulum can be adjusted





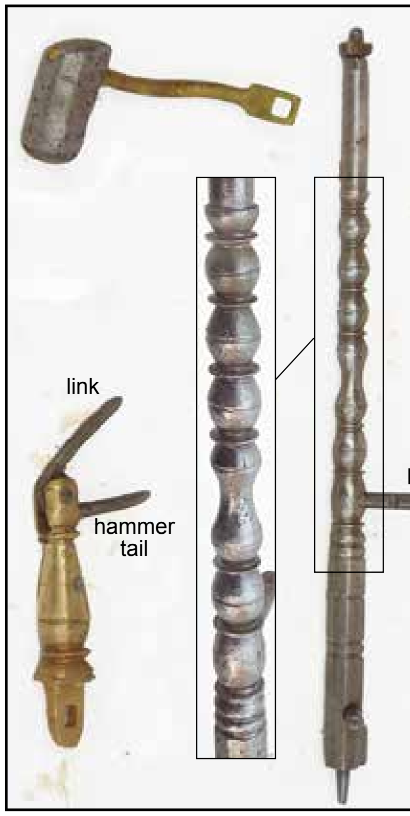


Figure 22. The verge escapement on the top of the movement. *Figure 23. The restored strikework.* *Figure 24. Components of the vertical hammer.*

by shortening or lengthening the thread to give coarse adjustment, with fine adjustment by a rating nut under the bob. This is yet another example of of the differences with English practice, where the pendulum is fixed to the verge, with a knife-edge rear pivot sitting in a brass V-bed. The verge, its cocks and the pendulum are shown in **figure 21**, with the top of the clock showing the escapement in **figure 22**. The duration is about half a day, depending on the weight drop, of course, and while balance lantern clocks also have to be wound twice a day, this was increased to a more convenient daily wind when pendulums were introduced. This clock retains the old system despite having a pendulum.

The strikework had been incorrectly re-made in recent times in a manner that could never have worked. It did not take me too long to realise that the slot in the right-hand rear pillar, and especially the rectangular aperture in the rear movement bar (illustrated in Part 1, figures 9 and 15 respectively) indicated that the original arrangement would have been similar in principle to the Liège clock discussed recently in *Clocks*, June 2023, pages 9-15. In this arrangement the two pairs of detents needed for warned striking are on opposite sides of the movement, instead of on the same side as is more usual. The main difference in the two clocks is that the Liège one has an internal link between the two sets of detents, while on this clock the link is external.

The restored strikework, **figure 23**, is comprised of two main components. Firstly

WHEEL COUNTS

Going train

crownwheel	15	8
contrate wheel	42	6
2nd wheel	56	8
greatwheel	48	4
hour wheel	52	

beat = 0.38 seconds
duration = half a day

Striking train

fly		[8]
warn wheel	42	6
locking wheel	42	8
greatwheel	48	4
countwheel	52	
hammer pins	6	

Overall dimensions

8¼in tall x 3½in wide x 4in deep
(210mm x 89mm x 102mm)
frame: 4½in tall (excluding finials & feet) x 3½in wide x 3½in deep
(114mm x 89mm x 89mm)

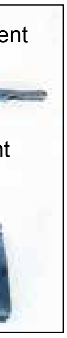


Figure 25. The movement showing the starwheel at the front.

an arbor pivoted between the left-hand pillars with the lifting piece squared on to the front end. This arbor carries the usual warning detent, but the offset fly precludes an internal unlocking link, so it is squared on at the rear end. This arbor was decorated with bobbin turning to match that on the hammer's shaft, as described later. The second part of the strikework is a horizontal bar, rather like a pivoted door latch, with a locking detent on its front side and a countwheel detent at the rear. The locking detent passes through the slot in the rear movement bar to drop into the notch in the locking disc on the second arbor.

It seemed obvious that this bar should pass through the slot in the rear right-hand pillar, and pivot on a taper pin. However, there was no way that it could fit into the slot and the locking detent to also pass through the aperture in the bar. The solution was to fit a small mounting plate into the slot, with the horizontal bar pivoted on a shouldered screw. A spring ensures reliable re-locking, while the free end of the locking bar is kept in alignment by an original guide screwed to the left-hand rear pillar.

The hammer is also rather special, as though it has the same type of rotating vertical shaft as used on the Liège clock and many other Continental clocks, it is highly decorative. There is an octagonal lower section, with the upper part having very fine bobbin turning in the form of balls and fins. Instead of the hammer tail being on an arbor pivoted between the left-hand pillars, as is more usual with this type of hammer, it pivots in a brass baluster-shaped post that is held to the bottom frame casting with a wedge. The components of the hammer are shown in **figure 24** and include an enlarged detail of the ball-and-fin turning, as well as the sturdy hammer head on a short brass arm.

Both weights hang on the left-hand side, and as there are clicks on both greatwheels there was the option for the owner to use separate weights for each train, or to hang a larger single weight on a Huygens loop. If the clicks had been the type that causes wear on the crossings of the

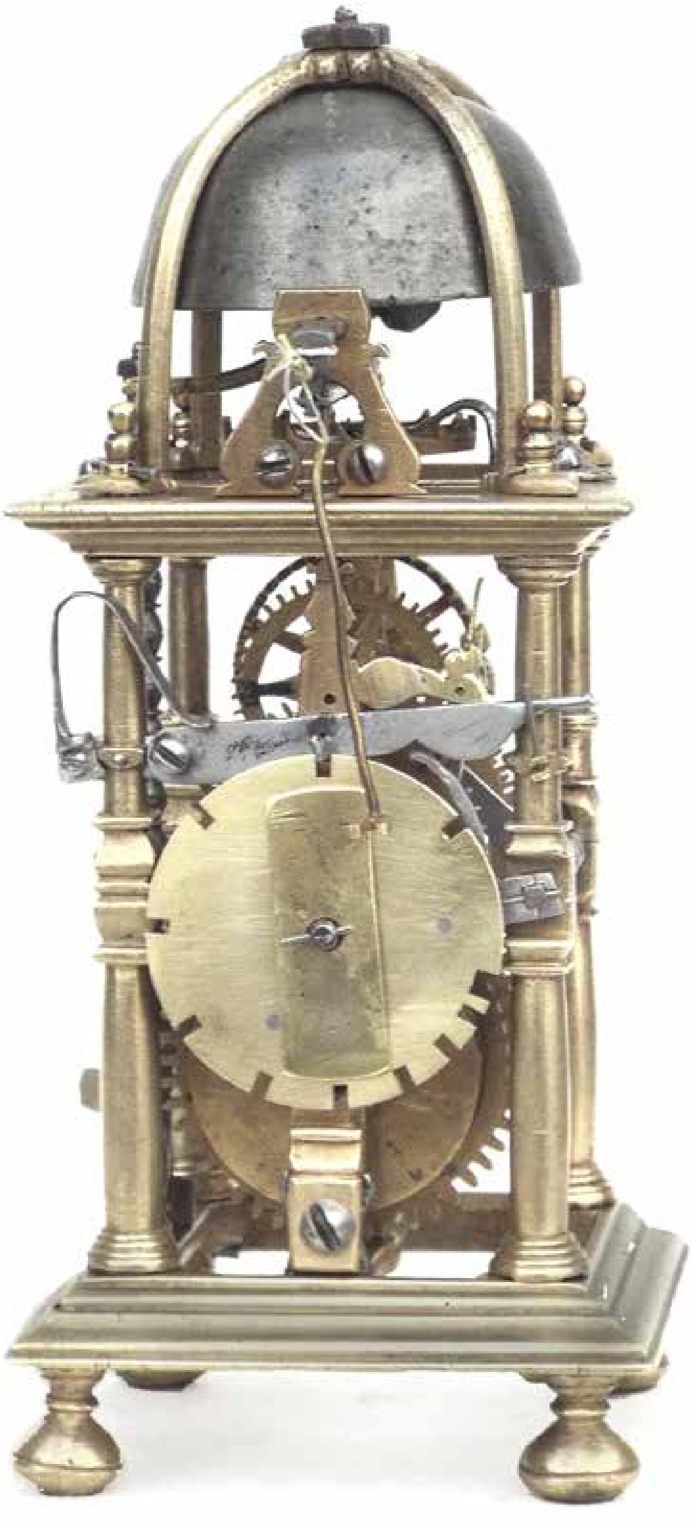


Figure 26. Rear of movement showing a movement bar held by a screw.

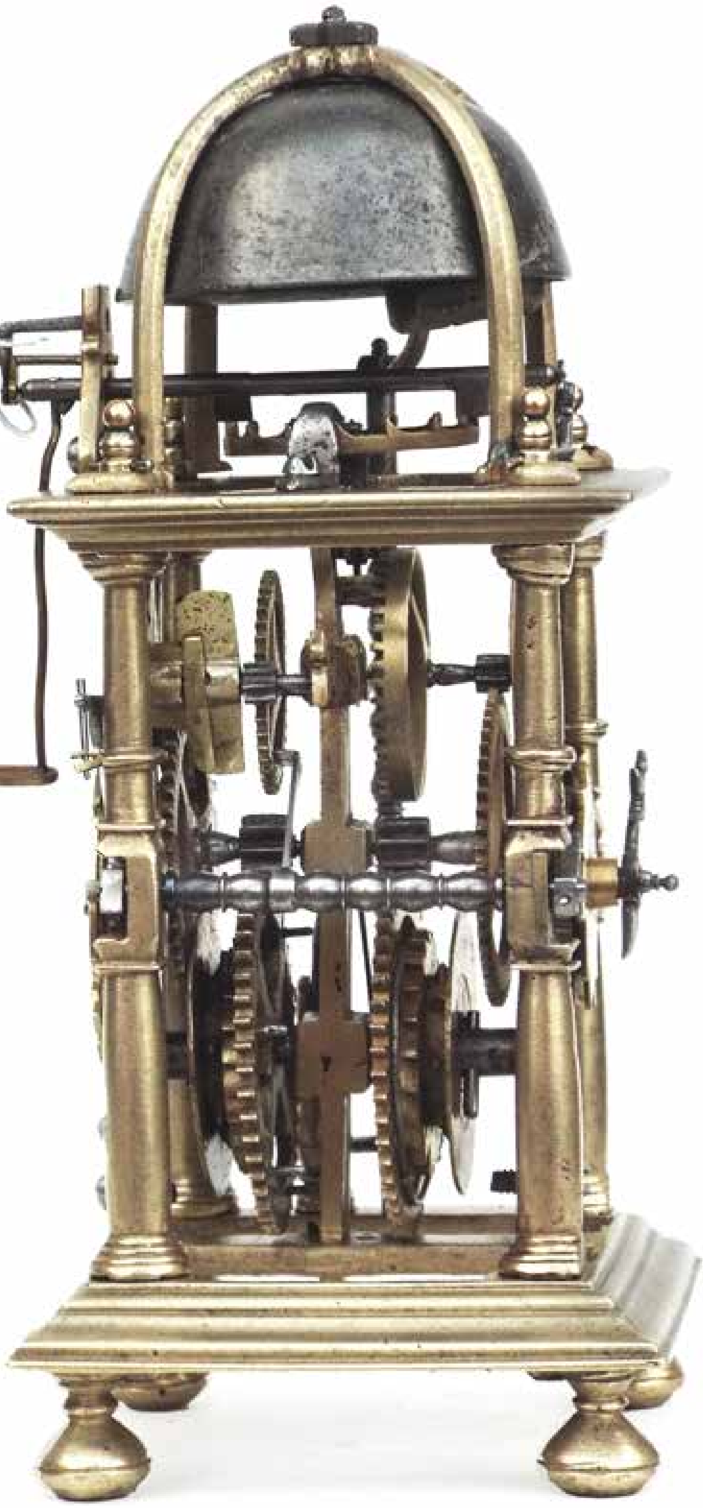
Figure 27. Movement from the rear with the countwheel removed

greatwheels it would had been possible to deduce how it had been used in the past, but on this clock we are left to speculate. Various views of the complete movement are shown in **figures 25** to **29**.

Though the final letter of the clockmaker's name is not known for certain, there are 11 different letters that would produce a valid French surname, with Ninet being the most likely, but none of the options are recorded as a clockmaker. Lisle is the old name for Lille, which is now in France near the Belgian border, and was formerly in French Flanders, with influences from the clockmaking traditions of the Low Countries.

By the latter part of the seventeenth century painted dials were out of fashion, as was the use of stars to separate the words. Presumably the customer preferred this retrospective style of dial, which would have been much brighter and clearer when new. Ball-and-fin turned strikework arbors and some hammer shafts, very similar to those on this clock, are also found on early Dutch and French spring pendulum clocks, confirming these clockmaking connections.

Throughout this article several unique features of this clock have been discussed



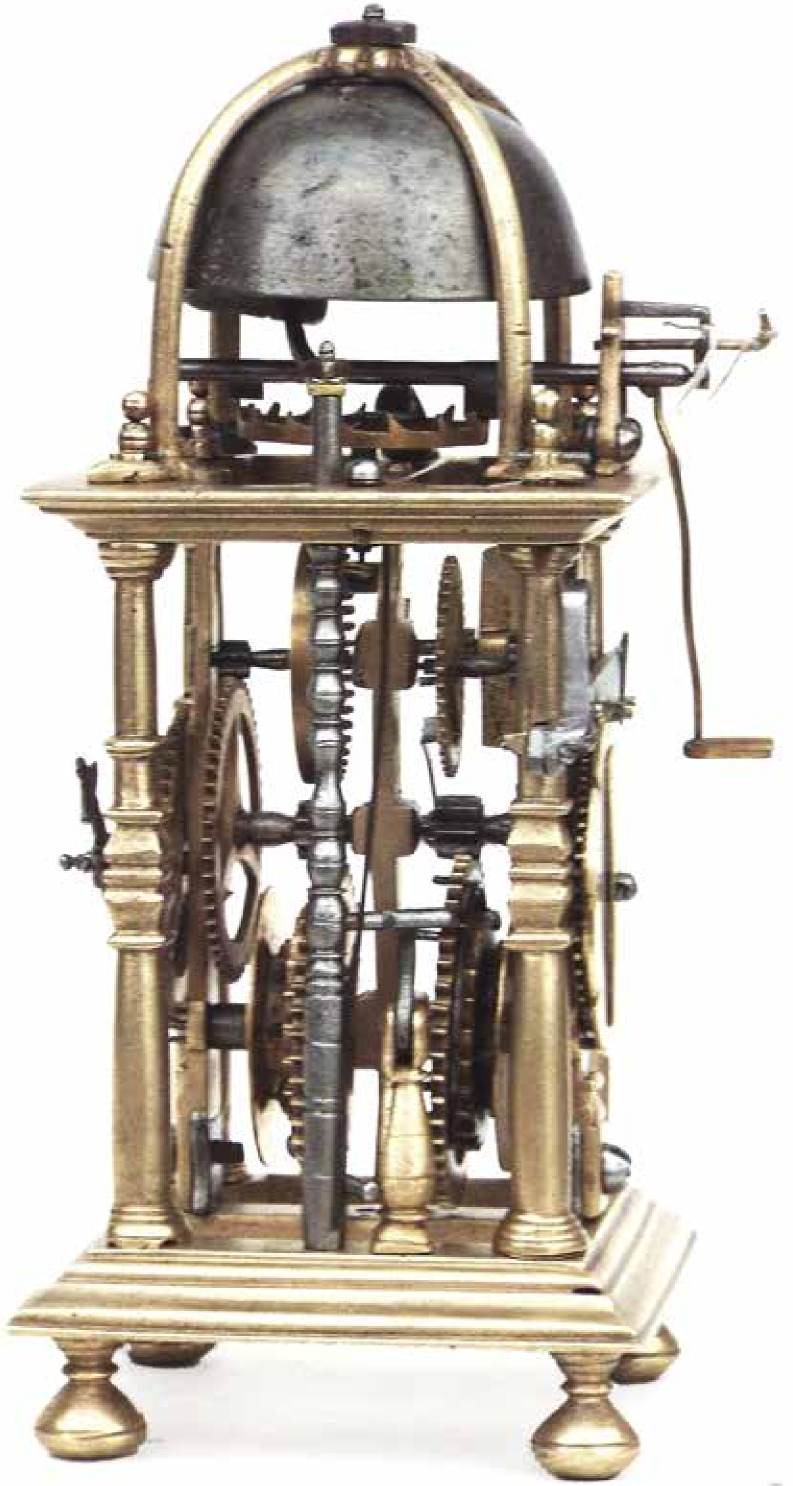


Figure 28. Left-hand side of the movement showing the restored strikework arbor with bobbin turning.

Figure 29. Right-hand side of the movement showing the original highly decorative hammer shaft and the hammer tail pivoting on a sturdy brass post.

and include:
- dial held with swivelling latches
- frame castings, pillars and bell strap held together by taper pins
- painted brass dial on a late Renaissance-style clock
- a two-part bell strap with a half-lap joint
- bun feet with tapered spigots
- movement bars screwed to iron brackets.

As well as these there are unusual features only very occasionally seen, including:
- thicker sections of the central movement bar for the in-line arbors
- hand setting with a fine-toothed click wheel
- locking and countwheel detents on a bar pivoted on the right-hand rear pillar
- fly pivoted in decorative side arms
- hammer shaft with high-quality ball-and-fin bobbin turning.

However, since the technical details of frame construction and the like are very rarely discussed in horological books and articles, they may have just not been reported before. To be on the safe side it is wise to say 'unique as far as is known'. Who knows what will turn up in a future provincial or internet auction?