DENT TIMEP

A superb example o

When, some time ago, I was contacted about 'getting going' a mantel clock that had sat in the back of a cupboard for quite a while, my first reaction was to be rather dismissive, expecting it to be a 1920s or 1930s mass-produced German mantel clock or an English 'Napoleon hat' clock of the type that I no longer accept for repair. I agreed to look at it and advise the owner if the cost of servicing would be more than its current value. It is fortunate that it was not dismissed out of hand, for when it arrived wrapped in a piece of old blanket and carried in a wicker shopping basket, the clock shown in **figures 1** and **2** was revealed. It was not a cheap mass-produced chiming clock, but a superb example of the highest quality English clockmaking from the early Victorian era, complete with its original numbered winding key.

It is what is commonly called a carriage clock—or more strictly a timepiece as there is no striking train—but this one is much larger than usual. It is often said, quite incorrectly, that carriage clocks are so-called because they were used in a carriage to tell the time on a journey. The same story is told about sedan clocks that are said to have been hung on a hook in a sedan chair, though why one needed to have constant access to the time during a relatively short journey by sedan chair is never explained. The original term for what is now called a carriage clock is travelling clock—that is one that you took on your travels, be it on horseback, in a carriage or by one of the new-fangled steam trains.

It would be in a close-fitting leather case with a separate compartment for the winding key and a sliding front cover that could be lifted to reveal the dial. On arrival it would be taken out of its case and placed on a bedside table and to complete its role of a travelling clock there is often an alarm to wake you in the morning, though usually no means of silencing the strike is provided, which might keep light sleepers awake.

With the increase in use of pocket watches and later wristwatches, the travelling aspect of these clocks became less important and they were used as small domestic clocks and to fulfil this purpose the Dent clock is larger than normal, standing 7¾in (20cm) tall with the handle raised and 4¾in (12cm) wide.

While I am personally not a great fan of the usual French carriage clock—they are too small to tell the time from a distance and too large to carry about with you—they are often of high quality and there is certainly much to admire about this one. It was intended to be a mantel or table clock in the residence of a well-to-do family. I will not repeatedly remark on its superb quality, which can be seen from the photographs anyway, but just state that everything about it is of the highest workmanship.

The substantial brass case has what is called a 'bronzed' finish with fire-gilt

Figure 1 (above). Dent timepiece N° 828 in a bronzed and gilt case.

Figure 2 (right). Another view together with its original numbered winding key.

IECE N° 828

of the highest quality

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bands around the base and near the top. It sits on four squat gilt bun feet and is topped by a cast and chased handle, also fire-gilded. All the glasses are chamfered, including that on the top through which the large balance is visible, though, due to the angle of the lighting, it appears to be opaque in **figure 2**. Apart from a few very minor imperfections in the gilding it is in immaculate condition.

Figure 3 shows how the movement sits on a base plate with the case fitting over it. The 2½in (6.5cm) diameter enamel dial, **figure 4**, has Roman hour numerals but no minute numbers, which had fallen out of fashion by the time of this clock, and is signed simply ' Dent London'. The dial, with Breguet-style hands, is a model of elegant simplicity and is framed by a perfectly fitting gilt mask engraved with acanthus scrolls, **figure 5**.

Since it is a timepiece the movement, **figure 7**, has no rack, snail and the other components that would be attached to the front plate of a striking clock. Instead there is just the motionwork and the set-up ratchet with its click. A large platform escapement sits on the top. From the reflections it can be seen that the plates are highly polished. Dent's name is repeated on the rear plate with the number '828' engraved below it, **figure 6**. To the left is the winding square with a reminder to wind it anticlockwise. To the right is a knob to set the hands, with its function engraved on the plate. The screws that do not appear to serve any purpose are for the brackets that hold the movement to the base plate.

Figure 8 shows the wheels, and being an English clock there is a fusee—French carriage clock normally have going barrels. And being a quality clock there is also Harrison's maintaining power, which can be identified by the polished steel click and the fine-toothed ratchet wheel just in front of the fusee wheel. The arbor directly above the spring barrel connects the hand-setting knob at the rear with the reverse minute wheel, which is squared on to the front end.

The components of the maintaining power are shown in **figures 9** to **11**. This ingenious device is very neat and virtually foolproof as it operates automatically as soon as winding of the mainspring commences and disengages when winding ceases. This type of maintaining power, known as the 'going ratchet', was invented in 1735 by John Harrison for his first sea clock, now known as H1, and is widely used in regulators and other high quality timekeepers. Interspersed between the usual winding ratchet and the first wheel (the fusee wheel) and rotating freely on the arbor is an additional maintaining ratchet with fine teeth acting in the opposite direction to the winding ratchet. The click pivots on an arbor between the plates. The winding click is not fixed to the first wheel as is usual, but to the front side of the maintaining ratchet.

On a regulator clock a couple of springs on the rear of the maintaining ratchet bear on the crossings of the great wheel, but with a fusee clock a stout stud on the reverse of the ratchet sits in a slot in the fusee wheel with a single strong spring screwed

to the inside of the fusee wheel—the effect being exactly the same as on a regulator. During normal running the fusee chain pulls the stud against the maintaining spring until it contacts the end of the slot, so effectively there is the usual solid drive to the fusee wheel. During running the fine teeth of the maintaining ratchet slip freely under the maintaining click, which operates only with the force of gravity. During winding the maintaining click prevents its ratchet from turning and the maintaining spring now powers the fusee wheel. As soon as winding ceases the drive automatically reverts to its normal operation. It is another one of those simple mechanisms that is difficult to describe but its operation is easily understood when it is seen in operation.

The final two illustrations show the platform escapement, **figures 12** and **13**. The top view shows the uncompensated balance and balance spring, which has no movable index for adjustment of the rate. Usually the

Top row, left to right

Figure 3. The movement and dial separated from the case.

Figure 4. The elegant enamel dial with an engraved gilt brass mask.

Figure 5. Detail of the Dent name, hands and engraved mask.

Next row, left to right

Figure 6. Rear plate with name, number, hand setting knob and winding square.

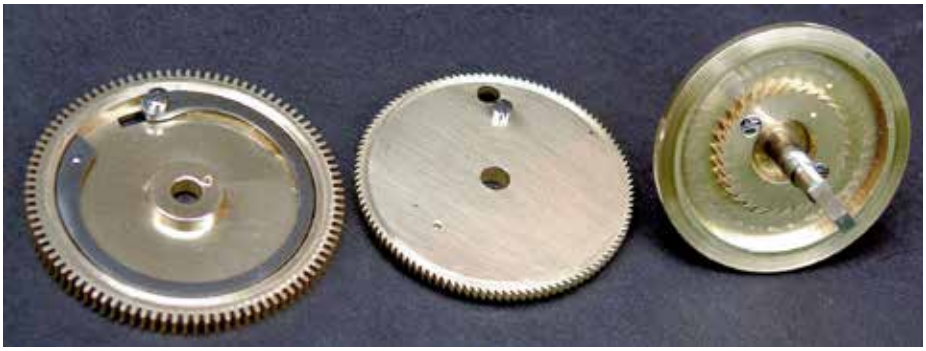
Figure 7. Front of the timepiece movement.

Figure 8. Movement with the front plate removed, showing the wheels, spring barrel, fusee and Harrison's maintaining power.

free end of the spring is fixed to a short arm on the balance cock and a pair of curb pins can be moved along the spring, thus altering the effective length of the spring by means of an indexing arm. On this clock the curb pins are fixed to a cock with the end of the spring fixed to another cock. The only means of altering the rate is by loosening the holding pin and sliding the balance spring in or out before fixing it firmly in place again. This may seem a retrograde step and inconvenient for the owner, but it was to prevent tampering by inexperienced hands. Once set by a qualified clockmaker or watchmaker it would need no further adjustment.

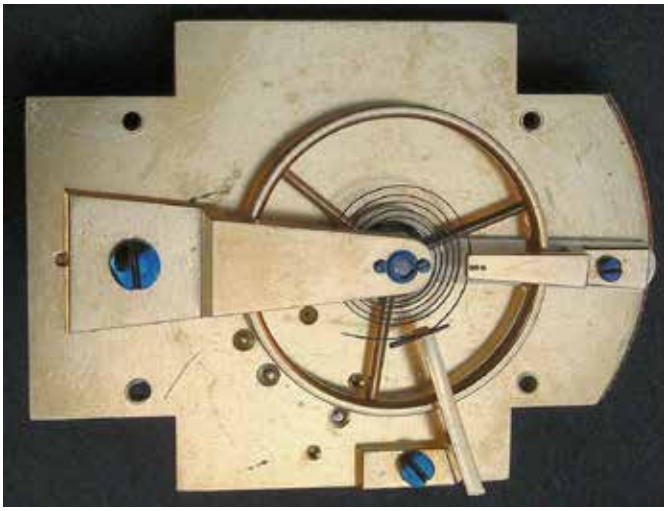
Being an English-made clock the platform does not have a Swiss escapement with club-foot teeth to the escape wheel, but an English lever escapement. The typical pointed teeth of the English escapement can be seen in the view of the underside, though the lever and pallets are partially hidden in the shadow of their cock. There are hardened steel end-plates fixed to the pallet and escape wheel cocks with screws.

The Dent numbering system is rather confusing as different series were used for watches, carriage clocks and chronometers and there is no list of numbers and dates that can be referred to, so reliance has to be placed on comparison with other examples. A virtually identical timepiece to the one shown here is illustrated on page 255 of *Carriage Clocks* by Charles Allix and Peter Bonnert (1974). It is number 517, retailed from Edward John Dent's premises at 52 Strand, London, in about 1845. This is one of the earliest known carriage clocks by Dent made after his partnership with John Arnold. N° 828 would have been made not long afterwards, probably before 1850 and it is certainly an early example. While not technically advanced, being without a striking train, repeating, an alarm or a chronometer escapement, it is still a



very desirable item.

It turned out that there was little that was fundamentally wrong with the movement. Lack of lubrication had caused the centre pivot to seize in its hole in the rear plate, and fortunately there was no serious damage that could not be put right by polishing out the roughness on this and two other pivots. The only other cause for concern was the mainspring, which was probably that originally fitted by Dent. While nowadays clockmakers are encouraged not to replace mainsprings unless absolutely necessary, this one



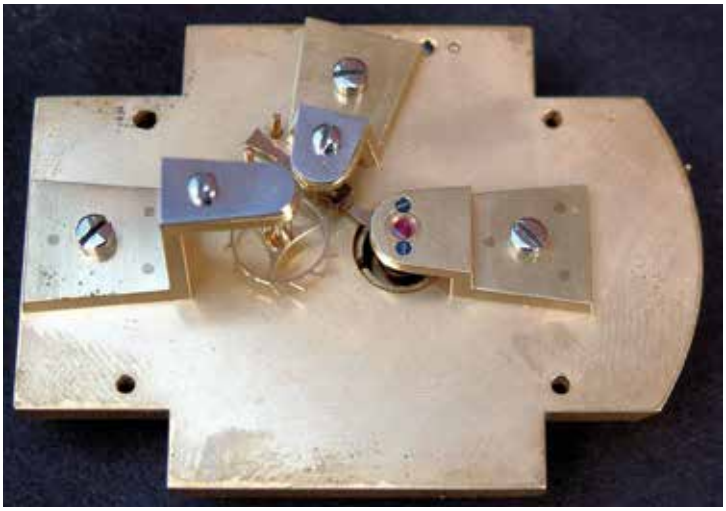


Figure 9 (top left). The maintaining power. Left to right: fusee wheel with the maintaining spring, maintaining ratchet, fusee with winding ratchet.

Figure 10 (top right). The fusee assembly showing the peg on the maintaining ratchet sitting in a slot in the fusee wheel.

Figure 11. (centre). The maintaining ratchet in position on the fusee wheel, showing the winding click.

Figure 12 (above). Top view of the large platform escapement with the balance and its spring.

Figure 13 (above right). Underside of the platform escapement showing the escape wheel, lever and steel end plates.

was so weak that it almost fell out of the barrel by itself, though of course it was assisted by a proper mainspring winder. Even with a spring as tired as this, pulling it out of the barrel by hand was likely to damage the edge of the groove where the end cap fits.

After removal the spring was wrapped in a plastic bag and returned to the owner so it could be kept with the clock as an historic artefact. If it will be preserved is anyone's guess, but I do know that when the quality of this clock was pointed out to the owner it did suddenly become a cherished heirloom—even more so when an approximate estimate of its value was given.