

“The Carriage Way”



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Is it a Carriage Clock?

President's Report



Stan Boyatzis

Happy New Year and welcome to this first Newsletter for 2015. It is now only four months until our first face to face meeting at the 2015 National in Chattanooga. Pat Manley has confirmed a booking for a meeting room on **Friday June 19th from 10:30 am to 12:00 noon**. The committee would like to meet as many of our members at the meeting as possible, so if you are attending the National, please mark the date in your diaries. The meeting will be for 90minutes including a 45minute lecture on 'Breguet's Carriage Clocks'. If you have anything you wish to discuss about the Chapter, please email Doug Minty or myself and we will put this on the agenda. If you have a special carriage clock you wish to show or require information about, please bring this along.

The feature article in the newsletter this month is the "Articulated-Flirt Striking in French Carriage Clocks by John Hamilton (Aust.). John, while researching the strike mechanism for his Enigmatic Bolviller, found very little published on the Articulated-Flirt Striking in French Carriage Clocks. He has thoroughly researched the subject for his article.

This is a Carriage Clock Chapter, but what is a carriage clock? What does the term imply? Is every clock described as a "carriage clock" really a carriage clock? Doug Cowan looks at what is and what is not a true carriage clock.

If you haven't already viewed the chapter website, I encourage you to do so.

Copies of previous newsletters, hints and a question page are included on our website. We also have added carriage clock articles from the Bulletin and carriage clock videos from the NAWCC library. You will need to be logged in as a NAWCC member to access these.

<http://community.nawcc.org/Chapter195/Home/>.

A link to the Online Galleries and 1stdibs websites are again included. These are useful websites to research retail prices of carriage clocks and what is currently for sale. The website is updated weekly.

We are happy to include other websites that may be of interest to the membership.

The Executive Committee hopes you enjoy reading the Newsletter.

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Articulated-Flirt Striking in French Carriage Clocks

John Hamilton (Aust.)

Introduction

Rack-striking repeater carriage clocks, in general, rely on a starwheel system of control to provide rapid change-over of hour registration as close as possible to strike release at the hour. Thus, necessarily, their striking must function “without warning,” and be suitably equipped to control the patterns of blows sounded on their bells or gongs. For this purpose, French repeater movements with “rack and snail” striking have, in the main, been fitted with special spring-tensioned mechanisms, variously described as articulated-elbow-, strikeout-, or knockout-flirts . Such devices are designed to interact with pins on the rotating cannon wheel, to initiate striking “*in passing*”; and also, in response to the pressing of an externally mounted repeat button, to strike “*on demand*.” When triggered, the flirt engages and literally “knocks out” the rack hook to release the strike train and, at the same time, control the fall of the rack, to produce the required patterns of blows on the bell or gong.

Over its 200-year history, the French carriage-clock industry has produced at least two different forms of these flirt-equipped strike release mechanisms. Surprisingly, only one of these, viz. the “Lever-assisted” flirt¹, has so far, been identified, and described in the literature.² Strangely, the existence of the second type --- the Thrust-control” flirt¹ seems to have been completely overlooked by the writers of carriage-clock texts, even though examples of its use by well-known “earlier” (i.e. pre-1860) Paris makers (including Paul Garnier), have never been at all difficult to find.

1. The Original “Lever assisted” Strike-release Mechanism

The “lever-assisted” form of the articulated-flirt strike-release is, almost certainly, attributable to Abraham Louis Breguet, who, as early as 1796³ was manufacturing high quality and mechanically complex travel clocks for members of the European aristocracy and other rich and influential patrons. As might be expected, these special pieces have always received a great deal of attention in the horological literature, but usually focusing primarily on their external beauty and constructional perfection, and with only brief accompanying references to their special mechanical features (e.g. escapement type) and complications.^{4,5} Detailed information, concerning their “less spectacular” functions, such as *in-passing* and *repeat striking*, is rare in the general horological literature. Indeed, of all reports on Breguet’s early carriage clocks, currently known to the Author, only *one* has included a “cadrature” view of the movement. This appears in the Introduction section of Peter Fritsch’s recently published book on Viennese Travel Clocks.⁶ It is identified as Breguet’s clock N° 2516, a piece which, existing records indicate, was completed for sale to Baron de Blome, a German aristocrat, *in 1811*. Breguet housed the

¹ Name proposed by the author.

² See Chapter 13, The Carriage Clock, a Repair and Restoration Manual, Laurie Penman, N.A.G. Press, London 2005.

³ The firm’s records reveal this as the year in which Breguet completed his *first* “carriage”clock, It was sold to General Napoleon Bonaparte in 1798.

⁴ “The Art of Breguet” George Daniels, Sotheby’s Publications, 1975.

⁵ See pp. 27-28 in Carriage and other Travelling Clocks by Derek Roberts. Schiffer Publishing Ltd. 1993.

⁶ p.20 in “Viennese” Travelling Clocks („Wiener Reiseuhren”) by Peter Fritsch. FCP Eigenverlag.2010.

clock in an Empire-style case of gilded bronze, and equipped it with a Petite/Grande Sonnerie, quarter-striking movement, with added alarm and three-dial perpetual calendar complications.

Readers versed in the workings of late 19th century and early 20th century French repeating carriage clocks will recognize a number of very familiar features in the cadrature mechanism of the de Blome clock (**Plate 1**). Note, in particular, its centrally located articulated strike-release mechanism, which consists of vertical flirt (**A**), screw-coupled to its associated horizontal “knockout” bar (**B**). The flirt unit is here pictured at its “maximum drawback” position (i.e. approaching the moment of strike let-off), with the “shark-like” jaw (**C**) of its “knockout” fully engaged with the rack-hook’s horizontal pin. The hour-rack (**E**) is pivoted on post (**F**), and, in the picture, is shown fully gathered, with the lowest of its 15 teeth resting on the nose (**G**) of the rack-hook (**D**). The quarter-rack (**O**), which is separately pivoted on post (**Q**) is largely hidden behind the hour rack. The snail (**J**), screw-fixed to a quite small starwheel (**I**), is mounted on the front plate, to the left of the centre arbor. Its distance from that centre of rotation suggests that the progressive advancement of the hour registration in this clock may not be *directly* controlled by a pin on the cannon wheel.

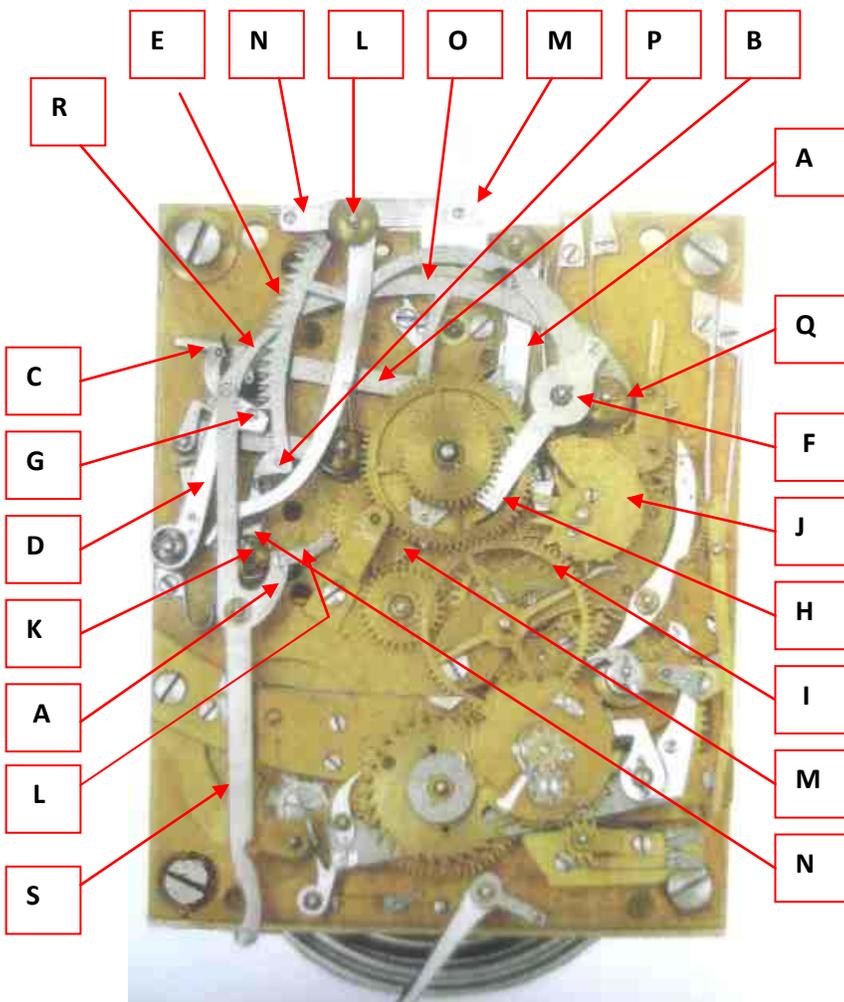


Plate 1

Cadrature view of the quarter-striking movement of carriage clock N°2516, completed by A.L. Breguet, and sold to Baron de Blome in 1811.

Base image reproduced from p.20 of “Viennese” Travelling Clocks by Peter Fritsch, FCP Eigenvelag, Wien 2010.

A very important characteristic of the mechanism, is the pivoted bell-crank component. When “Petite Sonnerie” mode is selected using the lever (S), this “assist” lever allows the rack to fall at the hour, but blocks its path during the half- and quarter-hour striking events. The illustration shows the L-shaped piece, with its curved horizontal limb (L) extending behind the cock-supported minute wheel (M), to engage with, and continuously “follow” the rise-and-fall motion of the lifting pin, set in its rear surface. In operation, the crank’s vertical arm (N) thus is rocked back and forth beneath the boot-shaped lower tip of the rack (P), and, at the instant of the hour strike, is timed to be clear of the downward travel path of the released hour rack. At other critical times when strike-triggering occurs (i.e. at the half- and quarter-hour sounding times) it is placed to block its fall.

A “Modern” Hour-repeater with Breguet-type Flirt Striking

Plate 2 shows a rack-striking hour-repeater carriage clock, manufactured c1890 by Louis Fernier et Frère of Paris and Besançon. Cadrature details, provided by the additional views in **Plates 3 -7** confirm that its strikeout flirt-release mechanism is of Breguet “lever-assisted” type.



Plate 2

Hour-repeating carriage clock by Louis Fernier et Frère, c1890

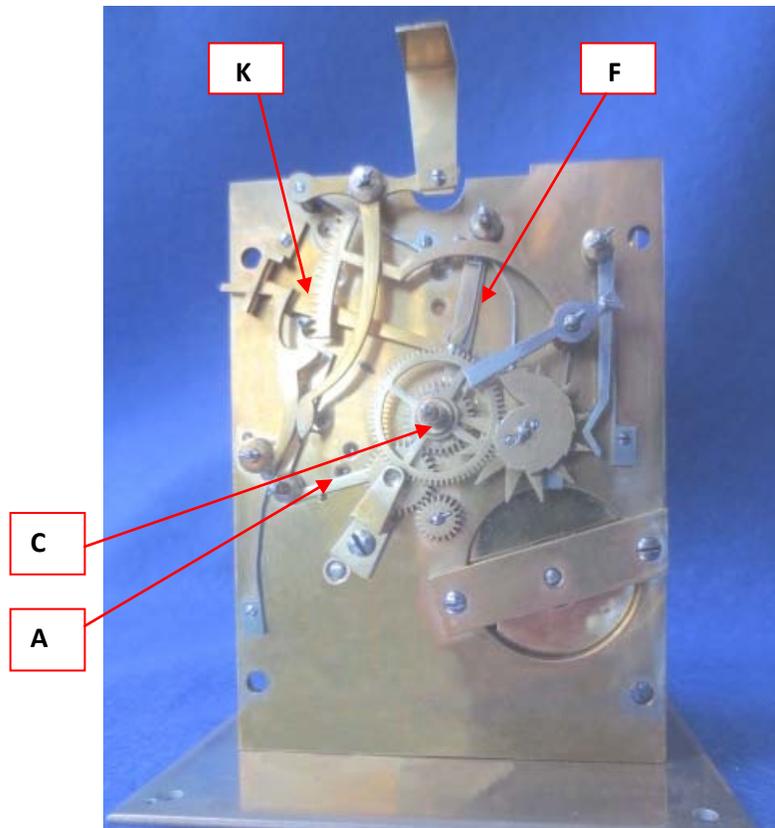


Plate 3

*Under-dial view of the Fernier repeater movement, showing two important diagnostic features of its Breguet strike-control mechanism, viz the single-notched articulated knockout unit, consisting of a pivoted and spring-tensioned flint (F) and a pivoted, cranked lever(A), which allows rackfall for the hour strike, but prevents it at the half-hour. The pin layout on the rear face of the cannon wheel (C) are shown in **Plate 4**.*

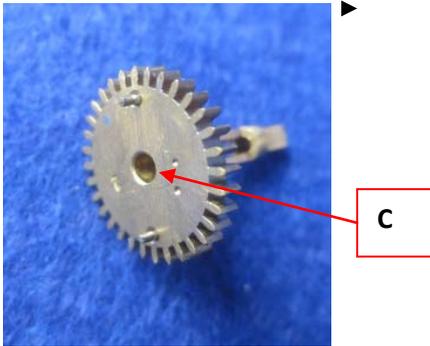


Plate 4

A third important diagnostic feature of the Breguet mechanism design ---symmetrical planting of the drawback pins.on the rear face of the cannon wheel (C).

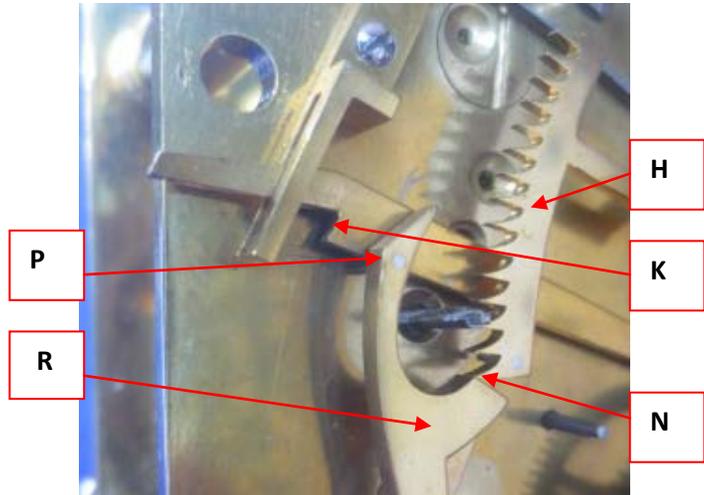


Plate 5

Close-up view of the Fernier clock's cadran, showing single-notched knockout bar (K) and rack (H) , in their "rest" positions on the pin (P) and nose (N) respectively of the rackhook (R).

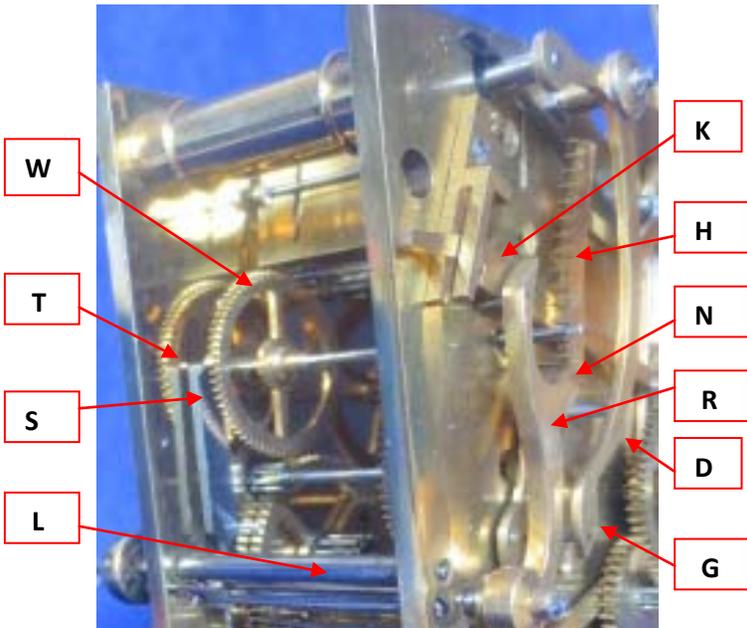


Plate 6

Striking commences when spring-tensioned knockout bar(K) thrusts out the coupled rackhook (R) and stop- post (S), simultaneously dropping the rack (H) from the nose (N) of the rackhook, and releasing the stop-pin (T) of the strike train's locking wheel (W) from the top of (S) .

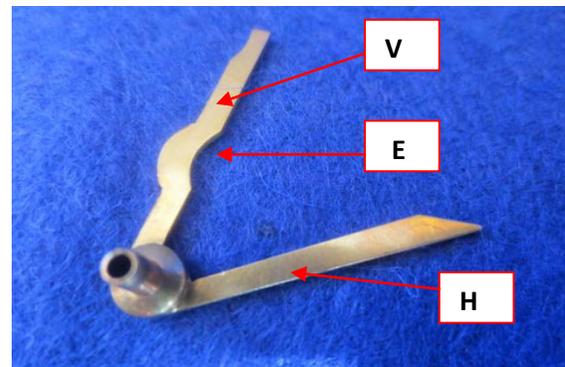


Plate 7

Cranked "half-hour lever" showing its horizontal "follower" and vertical "blocking" arms (H) and (V). Note the scalloped edge (E) on the vertical arm, which provides the necessary small working clearance for the "sweep pin"(G) of the Repeat Lever (D) (see Plate 6).

Garnier's "Thrust-controlled" Flirt-release Mechanism

A knockout-flirt strike-control mechanism, differing significantly in its construction and *modus operandi* from that designed by Breguet, became available to the growing carriage clock making fraternity of Paris, perhaps as early as the mid 1830's. It remained *in vogue* for at least three decades, during which time it appears to have been used extensively by Paul Garnier and at least some of his well-known Paris contemporaries (including Jules, Bolviller and Moser), all of whom were then constructing hour-repeating *pendules de voyage*. From the evidence now available, it seems *very likely* that Garnier was the originator of this alternative strike-control device. However, the fact has yet to be proved. Derek Roberts⁷ has presented illustrations which clearly show that Garnier, the "master innovator" was experimenting with flirt-operated systems in some of his earliest (Series 1) rack-striking repeaters, manufactured c1839/40. These rather specialized examples obviously predated his introduction of a more simplified form, which was used in the repeater versions of his popular "standardized" Series II clocks.

In concept, the "Thrust-control" device was not really new. It was simply a clever innovation, based on Breguet's original articulated flirt, but modified, not only to simplify, but perhaps even more importantly, reduce the cost of its construction --- and without diminishing the mechanism's ability to carry out *in passing* striking functions at the hour and half-hour. The design of the mechanism was thus closely analogous to that of the strike-release systems formerly used in Paris-type roulant movements, which relied on varying the "lift" of the triggering flirts to effect either a simultaneous dropping of the rack and release of the strike train at the hour, or freeing the train to run and impeding rack-fall at the half-hour, in order to limit the strike to a single blow.

Three significant mechanical changes to the original Breguet design were involved in the development of the "alternative" mechanism. These are revealed in the following three photos, taken from the cadrature of movement No.1970, from a c1840 Garnier Series 2 repeater.

1. A reconfiguring of the drawback pins on the rear face of the cannon wheel, as shown in **Plate 8**, so that the "hour" and "half-hour" pins retain their diametrically opposite positioning, but are set to sweep at markedly different distances from the centre of rotation of the wheel.
2. Equipping the "business end" of the articulated flirt's knockout bar with two notches (see (N_0) and an inner (N_1) in **Plate 9**) to accommodate the differences in drawback resulting from the asymmetric setting of the hour and half-hour cannon pins.
3. Omitting the cranked lever, featured in the Breguet design for blocking the fall of the rack during half-hour striking events (see location (?) in **Plate 10**).

⁷ Figs. 3-12b and 3-13a Carriage and other Travelling Clocks by Derek Roberts. Schiffer Publishing Ltd. 1993.

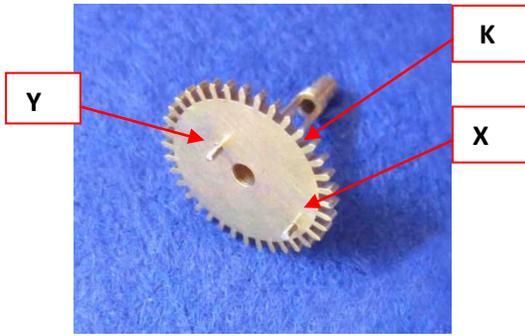


Plate 8

Rear view of the cannon wheel (K) showing the very different radial positioning of the hour (X) and half-hour (Y) drawback pins

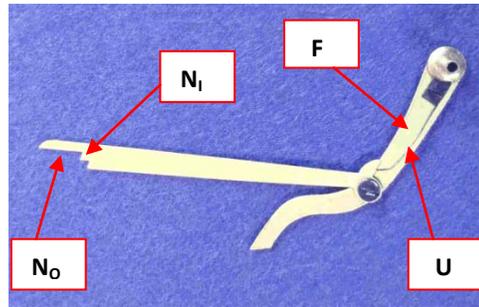


Plate 9

Detail of the articulated flirt of Garnier's Series II hour-repeater, showing its vertically pivoted flirt (F) and double-notched knockout bar (No and Ni). The small tension spring (U) ensures positive engagement of the bar's notches with the rackhook pin during knockout operations.

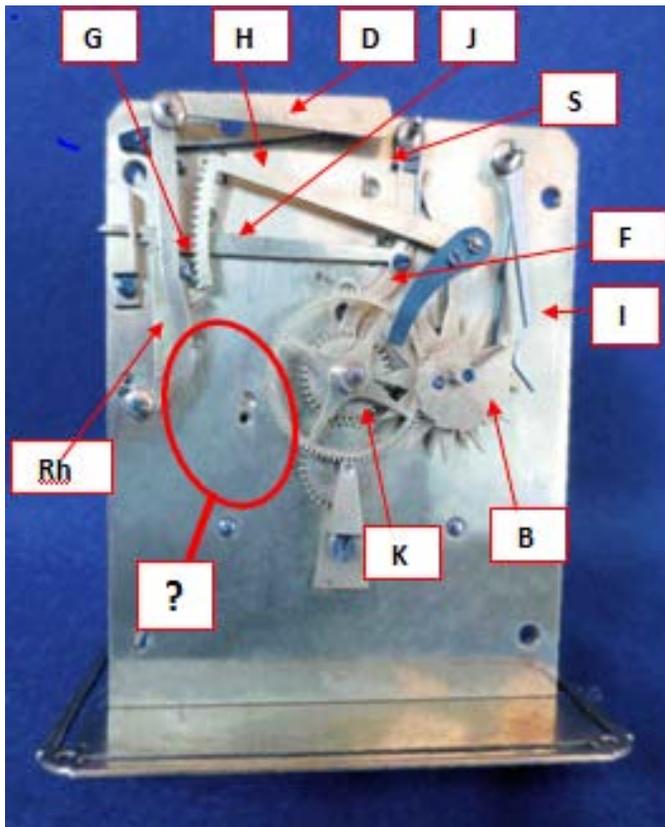


Plate 10

Cadrature of Garnier's Series II hour-repeater movement N° 1970, showing the pivoted flirt (F) and knockout bar (J) components of its strike-release device. The familiar forms of the gathering pallet (G) cannon wheel (K), rack (H), rackhook (Rh), cranked repeat lever (D) starwheel/snail (B) and starwheel follower (I), are also featured, but Breguet's cranked half-hour blocking lever is an obvious and interesting absentee (?).

Garnier's Knockout Striking Mechanism in Operation

The following series of photos tracks the mechanical events associated with a one-hour striking cycle (**08.30** and **09.30 hours**) in the Garnier Series II movement, illustrated in **Plate 10**. To maximize the “visibility” of the various striking events, the movement’s repeat lever has been removed and the dial hands have been retained in place on the centre arbor and hour wheel snout, to register the progress of time. Event times are shown at lower left; Plate numbering on the right.

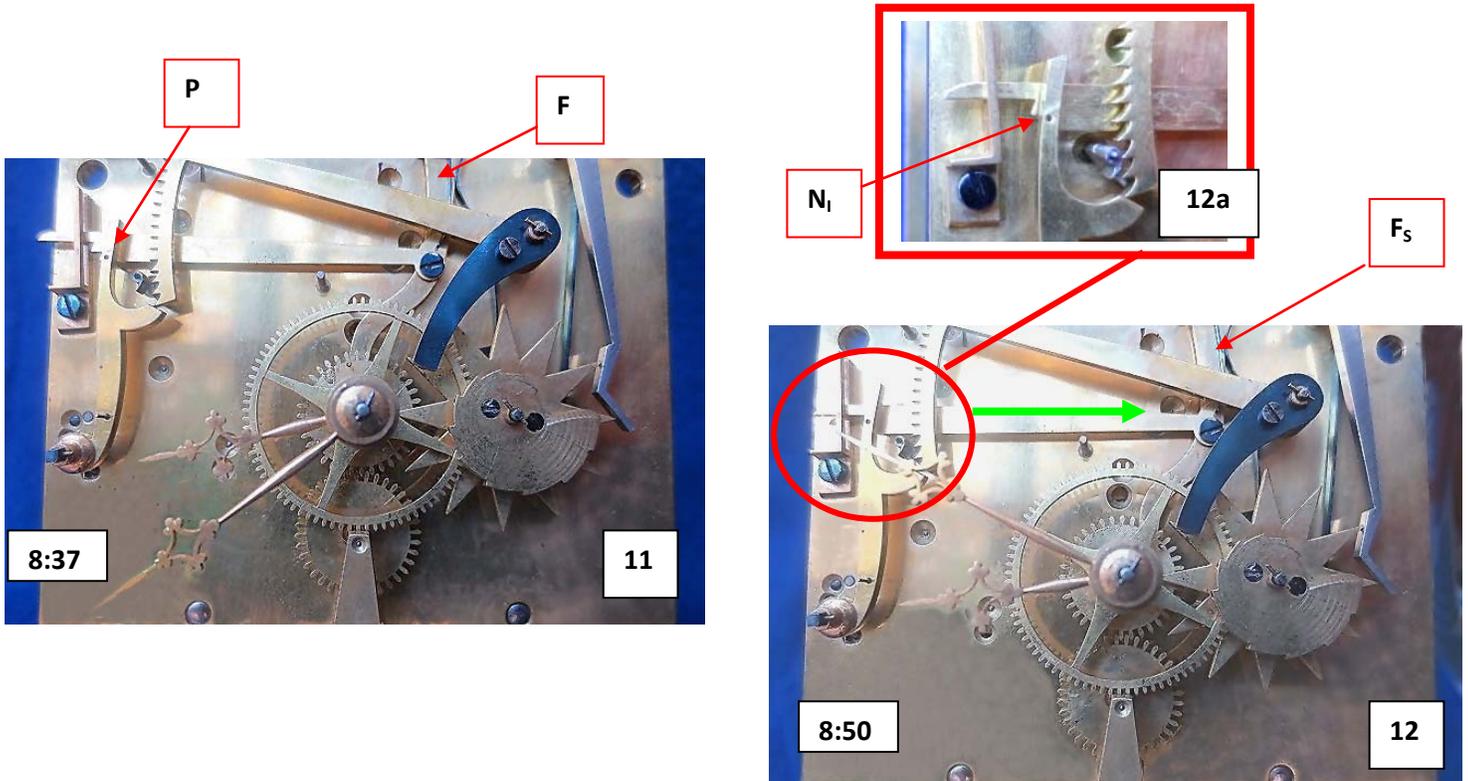


Plate 11. shows the configuration of the spring-tensioned articulated flirt *at rest*, following the “half-hour” strike event at **08.30**. The vertical flirt (**F**), now having been released from the (half-hour) pin on the cannon wheel, rests against its stop-pin, and under only light tension from its spring, (shown at (**S**) in **Plate 9**). The Knockout bar, which is receiving light downward pressure from spring (**U**) (see **Plate 8**) rests freely upon the rack-hook pin (**P**). At this point, its two end notches lie beyond engagement with the rack-hook pin.

Plate 12. At ~**08.50**, the “hour” pin of the cannon wheel has made contact with the lower end of the vertical flirt, and is carrying it to the right (see arrow), thereby increasing tension in the (flirt-) spring . Simultaneously, the linked knockout bar is being withdrawn to the right, resulting in a *transitory* engagement of its inner notch (**N_I**) with the rackhook pin (see **Plate 12a**).

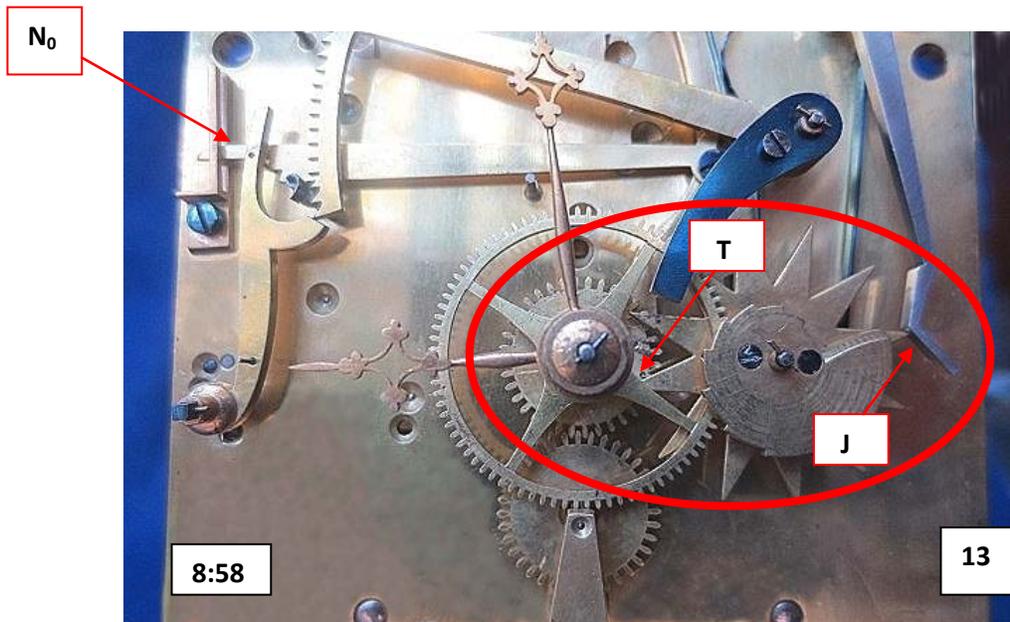


Plate 13. At ~08.58, the right-moving flirt is now approaching the position where the point of maximum tension in the flirt spring will be reached. The continuing withdrawal of the knockout bar has now enabled its outer notch (N_0) to capture the rack-hook pin, and the tumbler pin (T) on the *front* face of the cannon has also engaged and begun rotating the starwheel/ snail towards the point at which its jumper (J) will flip it over to locate the snail's 9 o'clock "terrace" beneath the tip of the rack-tail, in readiness for the hour-strike event.

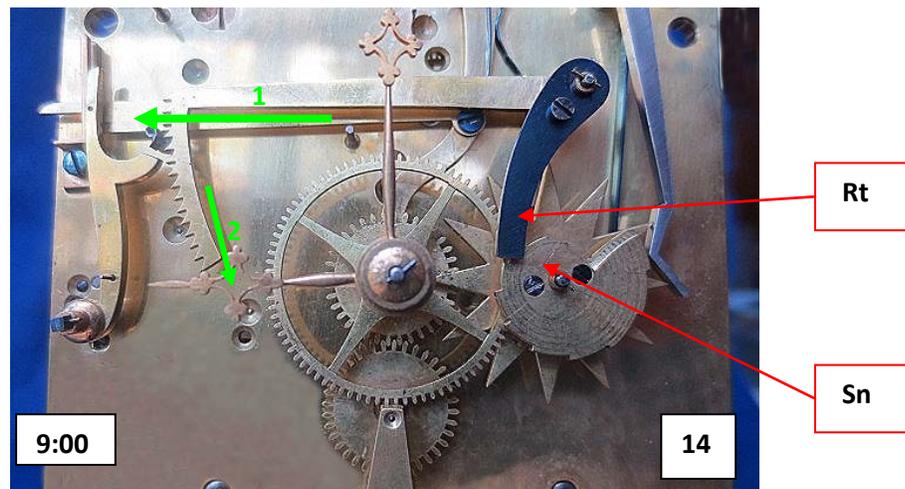
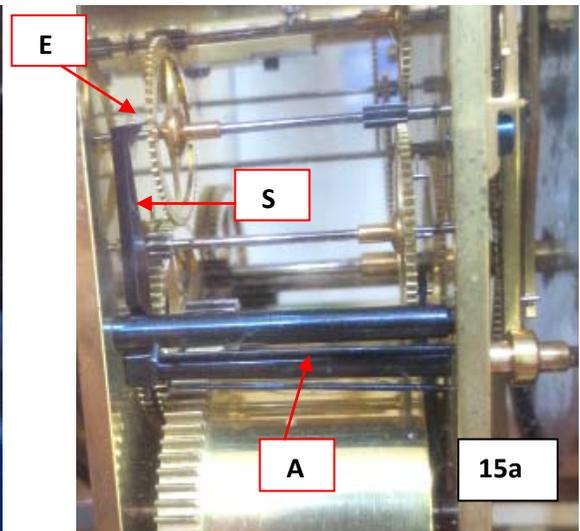
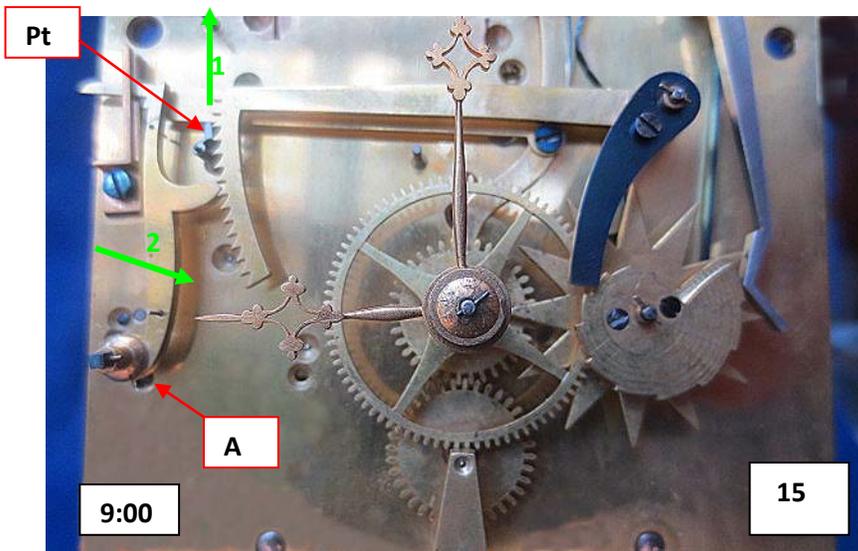


Plate 14. At 09:00, the starwheel has just "flipped" and the tip of the vertical arm of the articulated flirt has been released from the hour pin on the moving cannon wheel, and the now highly tensioned flirt-spring has thrust the flirt assembly to the left (**arrow 1**). In this process the knockout bar has carried the trapped rack-hook pin (and rack-hook) clear of the foot of the rack. The rack has fallen (**arrow 2**), and its "tail" (Rt) now rests upon the 9 o'clock terrace of the snail (Sn).



Plates 15 /15a. By virtue of its direct connection to the rack-hook via their common arbor (A), bridging between the plates, the stop-post (S) of the strike train has also been “knocked out” by the articulated flirt’s thrust, and thereby, has released the stop-pin (E) to set the train running. The long “lifting” tooth associated with the rotating gathering pallet (Pt), mounted on the extension of the stop-wheel arbor, outside the front plate, has lifted the knockout bar (arrow 1), disengaging it from the captured rackhook pin and allowing the nose of the spring-tensioned rackhook to fall inwards (arrow 2) and “ride on” the teeth of the rack. The strike train remains unlocked and the gathering-in of the rack proceeds.

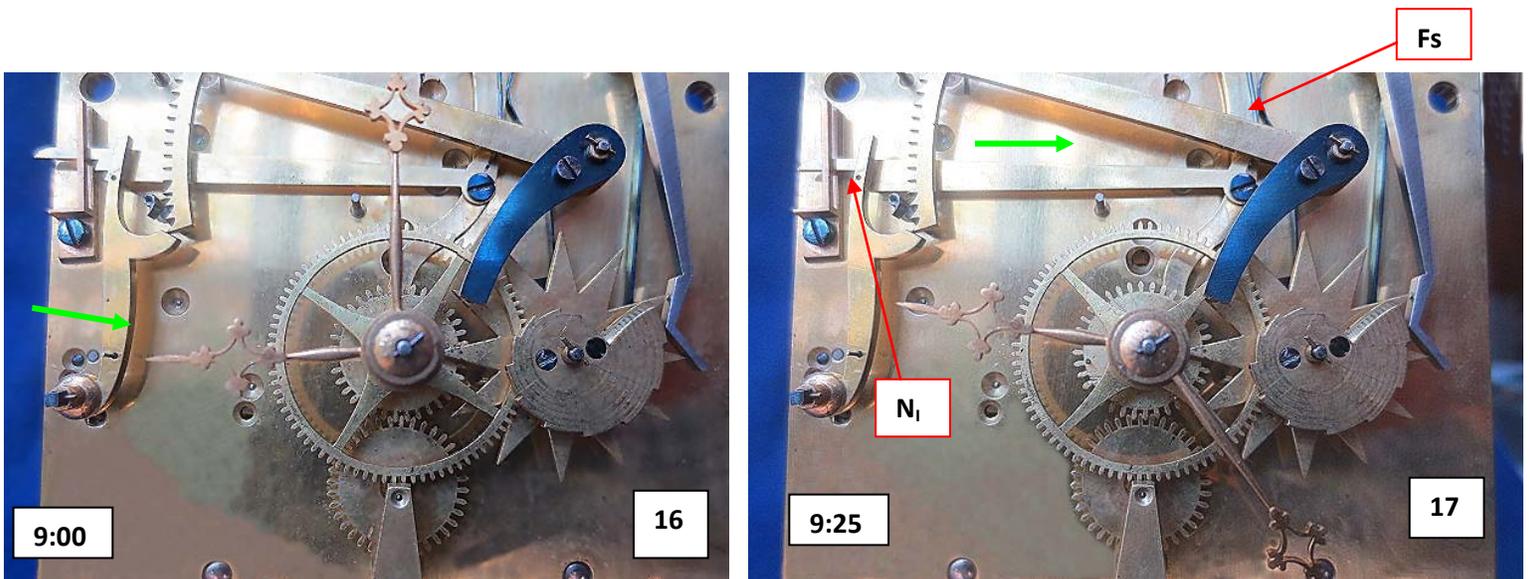


Plate 16. The final rack-tooth now gathered, the nose of the rack-hook is again able to fall (inwards) to the right (arrow) to its rest position, with its pin clear of both notches of the knockout bar, and with its nose supporting the foot of the rack. The rotary repositioning of the rack-hook also restores the coupled stop-post (between the plates) to its blocking position in the path of the stop-pin, and, thereby, relocks the strike train. The strike mechanism is once again “at rest.”

Plate 17. At 09:25, the “half-hour” pin on the rotating cannon wheel (see **Y** in **Plate 8**) has made contact with the foot of the vertical flirt, and is carrying it to the right (arrow). Its relatively small sweep radius has limited the withdrawal (to the right) of the knockout bar to such an extent, that, at the moment of the 09:30 strike let-off, only its inner notch (**N_i**) has been repositioned sufficiently to capture the pin of the rack-hook. For the same reason, relatively little the tension has been developed in the flirt spring (**F_s**).

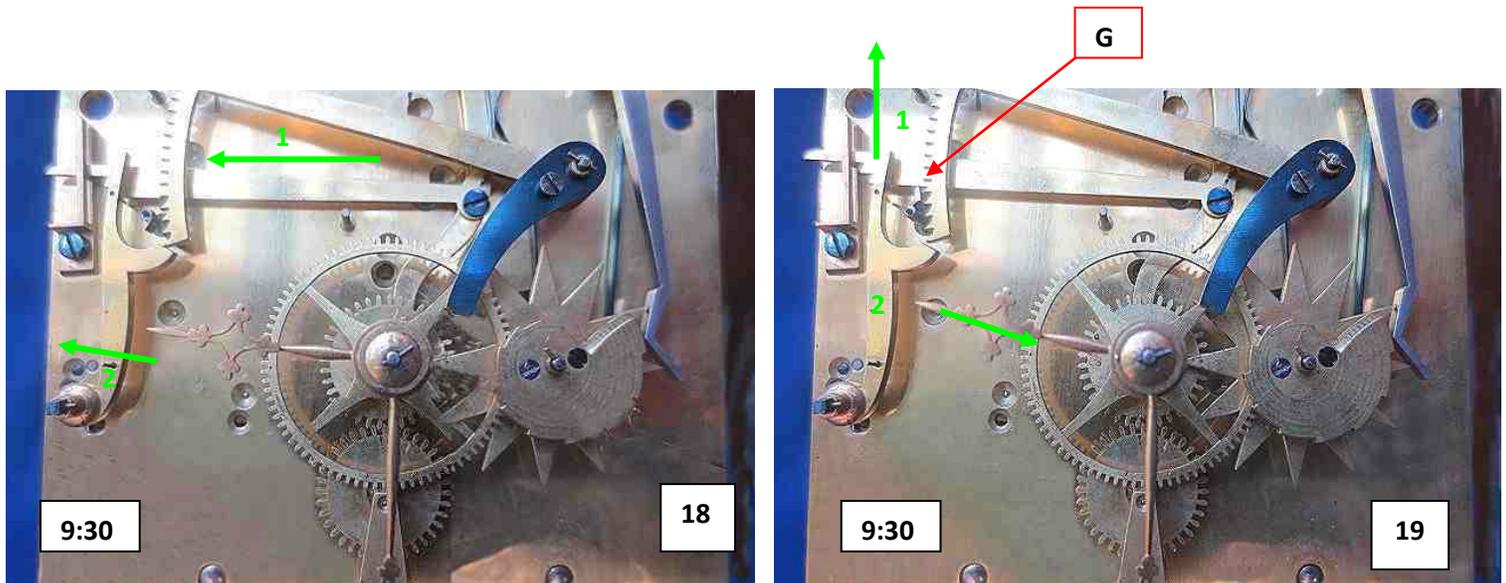


Plate 18. At 09:30, the tip of the vertical flirt has “dropped off” the cannon pin, initiating the half-hour strike event. Under the (relatively weak) force applied by the flirt spring, the knockout bar has been thrust to the left (arrow 1), carrying with it the trapped rack-hook. The blow has rotated the rack-hook back (arrow 2), sufficiently to set the time train running, but, due to the travel limit imposed on the bar by the flirt’s stop screw (see **S** in **Plate 9**) has not dislodged the rack from the nose of the rack-hook. The rack-hook pin remains trapped, but will soon be released by the now rotating gathering pallets.

Plate 19. As the gathering pallet rotates, its lifting finger raises the knockout bar (arrow 1), to release the rack-hook, which now falls inwards (arrow 2) to resume its original “rest” position with its pin located beneath the knockout bar and free of both knockout bar notches. The strike train continues to run and sounds a single blow is on the clock’s bell.

Epilogue

Just how long the original form of Garnier's knockout device remained *in vogue* is uncertain. Clever, though the design was, movements fitted with it, unless very well maintained (particularly in relation to wear on trip pins and the condition of tensioning springs) would be likely to develop "misfiring" problems. Some makers experimented with modifications of the double-mouth profiles in their knockout bars to reduce "over-sensitivity" in relation to the control of rackfall during half-hour striking. Two interesting examples are shown in **Plate 19**. Item **1** is from an hour repeater by Bolviller (N°186); item **4**, comes from a similar clock by Jules (N°124)

Both clocks, which are datable to c1870, have much enlarged, gullet-like inner notches, which are evidently meant to provide more secure "entrapment" of their associated rackhook pins, as well as a greater tolerance for any variations in "thrust" energy delivered in the knockout event at the half-hour strike. The articulated flirts, which are pictured as items **2** and **3**, provide interesting comparisons, both having much shallower inner notching, and, like the original Garnier design (see **Plate 8**), almost certainly come from an earlier (pre-1850?) period of manufacture.



Plate 20

Articulated flirt components from a selection of hour repeater carriage clocks, probably produced in Paris between c1850 and c1870.

1. Bolviller N°186

2. Bolviller N°10

3. Moser N°1757

4. Jules N°124

However, in spite of any such efforts to improve the performance of the Garnier system, its inherent "unreliability" would, almost certainly, have had an erosive effect on its popularity within the industry. It appears that, by the 1880's, it had been entirely discarded in favour of Breguet's Lever-supported mechanism, and, in fact, had been adopted as "industry standard" for the mass-manufacture of all striking movements (both plain *and* repeating).⁸

Acknowledgment

The Author wishes to express his sincere thanks to Peter Frisch for permitting use of the cadrature image of the Breguet carriage clock N° 2516, reproduced from p.20 his book "Viennese Travelling Clocks" F C P Eigenverlag Wien 2010, and included in this work as **Plate 1**.

⁸ The Carriage Clock – a Repair and Restoration Manual, Chapter 13, pp.200-201, by Laurie Penman

What do you understand by the term “Carriage clock”?

The Collins English Dictionary includes the following:

Carriage Clock

Noun

A portable clock, usually in a rectangular case with a handle on the top, of a type originally used by travellers but now ornamental.

Collins English Dictionary - Complete & Unabridged 2012 Digital Edition

De Carle in his Watch and Clock Encyclopaedia defines a Carriage Clock as:

“A distinctive style of portable clock having a platform escapement . The case usually consists of a brass base having four vertical corner pillars holding front and side panels of glass or other material. The back is also of glass carried in a brass frame hinged to the rear pillars to form a door to permit winding. The top is similarly constructed permitting a working view of the escapement and bearing a handle for portability. Solid brass, stone, enamel or porcelain sides are also met with, there being numerous variations of the general construction”.

Neither Charles Allix nor Derek Roberts provide a definition of “Carriage Clock” in their glossary nor is there a listing of this term in the General Index.

John Hamilton from Australia and Doug Cowan from the US explore what is a ‘Carriage Clock’ and give their interpretation of the term. When was the term Carriage Clock first used in the English language? If any member is aware of any old 19th century catalogues using the term we would love to hear from you.

What's in a Name?
Where did the term Carriage Clock originate and when was it first used:
Doug Cowan (US)

Let us start with the use of the semi obsolete word "carriage". The dictionary describes the word as meaning conveyance of something. In my lifetime I have seen the word used in English in many applications. We have carriageway (English road) carriage house (separate building within an English country estate), baby carriage, doll carriage, horseless carriage (automobile), carriage of state (as used occasionally by English royalty), carriage trade (higher status customers), British rail carriage (rail car) and carriage paid (payment for transport) come to mind today. But how did that get connected to clocks?

Breguet, the French pioneer (died in 1823) of the modern carriage clock used at least four terms to describe these clocks. Two terms are most relevant in this context. The first is travel/trip clock (pendule de voyage). It is the one most broadly descriptive of the clocks as they were introduced in the early 1800's and is favoured by serious horologists for many similar clocks starting about 1700 with the application of the balance spring. The second term is pendule de carosse (now spelled carrosse) which means coach clock.

Coincidentally, I asked a French speaking Arts graduate what word would best define a conveyance in the mid 19th century. She immediately told me that the French word carrosse means a horse drawn carriage or coach. A dictionary description of the word reads as "a wheeled vehicle owned by a private individual for driving purposes." In other words, it is a rich person's carriage. The term is of course virtually obsolete, except perhaps for Queen Elizabeth's ride to ceremonial events as well as rides through parks in large cities.

Other English phrases have also described higher status English travel, such as "coach and four (horses)", and "Sir your carriage awaits you".

When it came time in the mid 1800's to prioritise the sale of travel clocks to the English speaking public, the main means of travel unless you were overseas in the colonies was by horse drawn coaches. But the alternative term carriages had more prestige (and still does) than the term coach which might convey paid transport rather than upper class mobility. There are other status terms that were still used in England when we lived there in the 1960's. A favourite of mine was pricing luxury objects in guineas, even then an obsolete currency term meaning 21 shillings (one more than in a legal pound). This was pure puffery, put to death by decimalization in 1971.

So until someone comes up with a more convincing answer, I'm going to believe that the term "carriage clock" was a well targeted idea by someone, French or English, as a way to interest moneyed people in England who travelled by coaches but wanted to be/ or were in the middle and upper classes. And it worked, long after both the conveyance vehicle and the need for that type of travel clock were no more. The clocks are novel looking, well made (at least they were), compact and visually interesting with their displayed "innards". That's why I was drawn to them, not because I wanted one for my frequent transatlantic flights.

If I live long enough, I hope to discover when and in what context the term "carriage clock" was publically used first. Very limited data suggests that it was between 1834 and the 1860's and had dominated England by 1875. As to who-- I doubt that we will ever find that out.

Is It a Carriage Clock?

Doug Cowan (US)

There is no useful definition of what qualifies as a carriage clock, but also no doubt that the term has great power with collectors, auctioneers and clock retailers. This is quite amazing since the need for this type of travel clock expired with late 19th C progress in railways, motorcars, (by early 1900's) as well as the plentiful availability of affordable and reliable pocket watches in the mid/late 1800's. One of my French/English dictionaries simply defines a carriage clock as a timepiece housed in a rectangular case and fitted with a handle. Not very helpful, though true enough historically.

The following anecdote emphasizes the emotional power that the term carriage clock has achieved. In the late 90's and since, I have given possibly twenty lectures in the USA and Canada covering the identification and history of (mainly French) carriage clocks. Our newsletter has published the most recent version. Before each lecture I would have the NAWCC people in charge of the chapter meeting or Regional convention ask their members to bring carriage clocks from home to be discussed .Many small clocks which were not remotely carriage clocks or only had the rectangular appearance of carriage clocks (alarm clocks) were brought in. The people did not want the answer to "is this a carriage clock? They argued for and insisted upon naming them carriage clocks. Sometimes the reasons were single variable ones, has a handle; is small and shiny; the shop/seller told me it was; it uses a hairspring balance; it is cute (usually a boudoir timepiece); and so on. This smearing of any ability to get people to accept a more limited definition continues today. eBay had many torsion clocks, small shelf clocks, crystal regulators (four-glass clocks in England) and electric wall clocks with plastic carriages listed this past week. The vendors managed to fit in the word carriage on all of them. Auctioneering advertisements invariably call small clocks with glass panels carriage clocks.

And so, since there has never been any trademark protection for the name, let's proceed. Carriage clocks have always been attractive, fashionable, starting with the early 18th century and the French genius, Breguet. They were born in a period of European history when sailing ship travel to distant ports was relatively slow and boring during a period of European imperialistic colonial growth. On those journeys a reliable, compact travelling clock companion especially if it had a calendar was a really desirable accessory. I have had the pleasure of seeing two mid to late 19th C French travel clocks whose cases listed the name and military army in India of the English officers who owned them. In hindsight, I should have taken pictures and notes!

What follows is my own personal definition of what is a carriage clock and what is not. There is not much proof for this, so I will not debate other opinions. The term is now ambiguous.

A carriage clock is a travel clock, designed and sold for helping people keep track of time and date while travelling in horse drawn coaches (carriages) for long trips during the 19th century. Fig. 1 by Garnier is such a clock.



Figure 1. A virtuous carriage clock by Garnier, Paris with its original carrying case, ca late 1830's

They had to be robust, compact, with sturdy outer cases, and preferably with push repeat buttons accessible without having any light while travelling or in dark coach houses or ship cabins without much light. For coach use, an alarm function to awaken you to the time the coach was leaving your hotel or for important appointments was also desirable.

Especially after circa 1880 carriage clock forms became many other things and have remained that way. They were/are: popular small wedding gifts; souvenirs of special events; inexpensive timekeepers and especially alarm clocks for industrial age citizens who lived in small homes or flats; and nostalgic reproductions of earlier pieces. There was also a class of very expensive ones made as artistic gifts, much like 18th century French clocks which featured quality artistic case work in which the actual timepiece played a secondary role.

Fig. 2 is a clock made for the Royal family of Spain. Although sold recently as a carriage clock it would not have survived long in that environment.



Figure 2: An English chronometer movement by a French, London maker in what is likely a French carriage clock case circa 1850 or later.

Chronometer escapements were too delicate to survive hard travel unless gimbaled and with the ability to lock down the balance wheel, defeating the purpose of running while underway. I have seen pictures of the outer case of a similar example. It was roughly the same shape as the clock itself, extremely awkward to handle safely, with no handle. To me such outer cases are protection for a valuable gift- like a case for a string of pearls or a box for a Rolex watch. They added handling protection as well as enhancing the emotional power of the gift.

There also were a myriad of late 18th and 19th C timepieces which were not carriage clocks but which used blanc-roulants or variants of them. These movements were, after all, mass produced in France.

In England, there were lots of balance wheel controlled smaller timepieces which some today go by the name of Bracket Clocks (a misnomer). Their appeal was avoiding the necessity to "fiddle" with pendulum settings after you moved the clocks. These were made as early as circa 1700 by London and Paris makers (notably Tompion). They were very small, usually 8-9 inches. 19th century ones were larger, usually 7-14 inches or so. Many had handles, as an architectural finishing touch, not to carry them by. These are all portable clocks but not carriage clocks. There were also many 18th C "Viennese" travel clocks with interesting case and movement features. They persisted until the mid 1800's but then followed the French designs and finally "faded away" as a factor.

Swiss makers favoured "officers" clocks in the late 18th C but those beautiful travel clock designs were gone when the French designs gained the market leadership in the mid 1800's. Most English carriage clocks are, I believe, gifts, for wealthy people and so early ones could have been meant for travel, but that was probably not the usual usage expectation. With a few exceptions, German and American carriage clocks of the late 19th C are not travel clocks, though they could have been used that way. At least one American maker, Chelsea, made a true carriage clock with a sturdy case. Their 1923 catalogue shows such a timepiece clearly named "travel clock". Good onya, mates!

The question of handle or not is not important to me personally. If the clock could be protected by a practical outer case and was accessible to the owner under hard travel conditions it is a travel clock and you certainly could call it a carriage clock; everyone else probably would! Finally I think our readers would enjoy an Australian perspective on these thoughts. Travel to/in that country was certainly difficult enough to cause a need for travel clocks and I have read that French carriage clock manufacturers in the mid-late 19th C held exhibitions in at least one Australian city.

What is a Carriage Clock?

John Hamilton (Aust.)

It is certainly unfortunate that the English speakers of this world chose to mis-translate the original "travel clock" title (viz. *pendule de voyage*) which was introduced by the 19th century French makers and marketers, and since that time, seems to have been accepted by the French-speaking Continentals. I can only agree with Doug Cowan that the "Carriage Clock" name is now too deeply entrenched in the English-speaking world to be effectively changed or replaced. However, I, like Peter Frisch, will continue showing a personal preference for using "travel clock" as a more appropriate *general* title for pieces, designed primarily to survive the rigours of transportation under reasonably protected conditions. Thus, clocks with recognisably fragile mechanisms (e.g. chronometer escapements and complicated automata) and with elaborately decorated cases, *probably* should not qualify for inclusion under that title. Doug, on similar grounds, may also wish to exclude some English-made products, which, as he maintains, are best classified as miniature, portable table clocks. .

Did "robustness" ever figure as important in the original designs for travel clocks? Probably not, at least for those being made for rich and influential clients. I feel sure that Napoleon Bonaparte, for one, would never have felt concerned about the security and well-being of *his* (probably delicate) Breguet clock --- even under battlefield conditions!! However, the early popularity of the less vulnerable one-piece case, first introduced by Garnier, might have had something to do with a perceived need for increased damage-resistance in transportable clocks. Consigned to the luggage of those increasing numbers of adventurous middle-class (and generally "less affluent") travellers, trying out the newly developing forms of steam transport, clocks would certainly have required some degree of ruggedness .

Daniels' initial comment (p.78 of *The Art of Breguet*) suggests that Breguet's designs for his "travel" clocks may have been conceived more with size in mind (viz. 110 to 160mm overall height) rather than any other special physical feature. I feel sure that his view of a "top handle" as anything more than a traditional attractive architectural feature, or perhaps, even as a simple physical convenience for facilitating the removal of the clock from its protective travel box, as very unlikely.

It is interesting to note that, Breguet, himself (see Daniels, p.78) applied four different names to his creations, one of which was *pendule de voyage*; one had a land travel connotation (viz. *pendule de carosse* = coach clock); and the final two (viz. *pendule portative* and *pendule*

Silvering a Platform

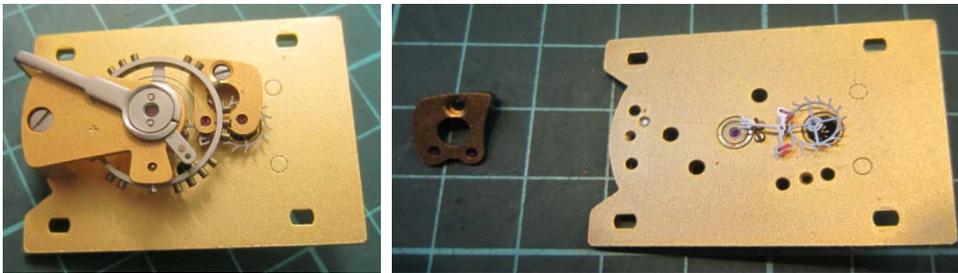
Stan Boyatzis (Aust.)

The process to be described is similar to the traditional French Silvering but utilizes a commercially available 2 jar system consisting of silver chloride (Horosilv) and Cream of Tartar (Horofinish). A good silvering paste contains about 25% by volume of silver chloride but because of cost the % silver chloride in the Horosilv is much less. It however produces a reasonable result and the paste may be reapplied to cover areas of exposed brass,



Preparation

The platform is disassembled and cleaned prior to silvering. This only should be carried out by someone who is familiar with disassembling and assembling a platform. Only the brass platform and cocks are silvered.



I use a Garryflex medium grit (grey:120 grit) abrasive block to clean the platform and a similar abrasive wheel on a mandrel to clean around difficult areas. The mandrel is held and used by hand. The banking pins are removed and silvered separately.





The platform is washed with warm water and the surface rubbed with fine salt using a small wad of clean muslin. A small amount of the Horosilv is placed in a container and using the wet muslin the Horosilv is rubbed quickly and evenly over the entire platform. The brass assumes a greyish appearance.

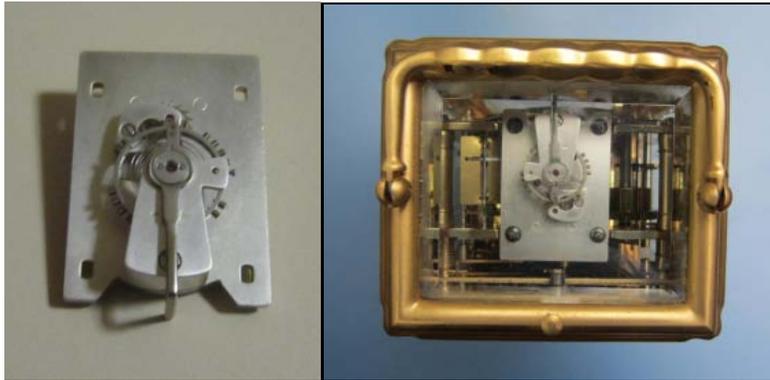


In a separate container place some Horofinish (Cream of Tartar) and with a separate piece of wet muslin take some Horofinish and continue rubbing until the silver on the platform is evenly distributed. Wash in warm water and dry. Check to see that all the required surfaces are silvered. If not, more Horosilv paste can be applied followed by Horofinish and rewashing and drying.





Make sure all holes on the platform are clean before reassembling.



Horosilv and Horofinish are available from :

<http://www.restoration-materials.gbr.cc/>

Do you own a carriage clock?

If so, you may have questions about your clock.

Such as - - - -

1. When was it made and by whom if it is not signed by a maker.

Many carriage clocks are marked by retailers, such as “Tiffany”. Many times the maker is not identified. However the maker can often be identified by the construction style and other tell-tell signs found on the movement.

2. Should I clean the case, or not?
3. And the greatest question of all, what is it's value.

This is the hardest question to answer because of the many variables, such as condition of movement and case, the name and standing of the clockmaker, & the quality and rarity of the clock. We are not licensed appraisers. We can only advise you where to look for comparable clocks so you can make your own "best guess" as to the actual value, always remembering the oldest approach to a value is "Willing Buyer, Willing Seller".

Members of our chapter have many years of experience collecting, researching and restoring carriage clocks. Many are willing to help you answer some of these questions.

This free service is for NAWCC members only.

Email questions and pictures of your carriage clock (one clock at a time, please) to:

Ken Hogwood: (USA) kenhogwood@aol.com

Doug Minty: (Australia) dminty@optusnet.com.au

Link to the Online Galleries website

www.onlinegalleries.com/art-and-antiques/antique-clocks/carriage-clocks

Link to the 1stdibs website

<https://www.1stdibs.com/furniture/more-furniture-collectibles/clocks/?q=carriage+clock>