

## **Review**

# **The Self-Winding Watch, 18th - 21st century**

**By Jean-Claude Sabrier**

**308 pp, 252 ill (many with several parts), 2011, Paris:  
Editions Cercle d'Art.**

Quality: Poor.

Jean-Claude Sabrier is a highly regarded writer and, in the view of some, "one of the world's foremost horological experts". In this context his book is likely to be considered as the "bible" on self-winding watches, replacing Jaquet & Chapuis' 1956 book "The history of the self-winding watch" and its 1952 first edition "La montre automatique ancienne". Given this, the author has the responsibility to ensure his work is comprehensive and above criticism. Unfortunately it is not, and I seriously fear that future students of horology will gain an incorrect and unsatisfactory knowledge of the subject.

I have elsewhere pointed out that I try to review books in the context of the author's stated aims. Sometimes no aims are specified, but other books suggest, in a preface or an introduction, what we should expect. Then it is possible to compare the results with the author's ambitions. In this case we have a preface by Jean-Claude Biver (C.E.O. of Hublot) to guide us. He states, in part, "Today historians and researchers favor a more rigorous and methodical approach. ... Jean-Claude Sabrier's book is destined to become an essential and indispensable tool for all collectors, scholars, historians, and dealers."

Viewing this book in this context, it is poor.

There are three major problems with Sabrier's writing.

First, he is a chronicler and not an historian. As a chronicler he simply presents information (although often not in chronological order). In contrast, an historian must also analyse and interpret the information to provide a credible explanation of events. Sabrier does not do this. He does indirectly imply some things, but without any supporting arguments to justify his inferences.

Second, an essential requirement of both chroniclers and historians is that they present all the evidence, either directly or through appropriate references. This is necessary to ensure that interpretations by either the author or the reader are based on a fair and comprehensive

understanding. But Sabrier does not present all the evidence. Instead he picks out those bits that suit his purpose and ignores the anything embarrassing. And, except for Jaquet & Chapuis and a few early documents, the book is devoid of references. It is as if Sabrier is the first person to write on the subject since the 1950s. This is absurd, if only because of Joseph Flores. Hate him or like him, Flores has made a substantial contribution to the history of self-winding watches and he cannot be ignored. But Sabrier manages to pretend that Flores does not exist!

And third, the book is concerned with the design of a particular aspect of watches, the self-winding mechanism, which is highly technical. But, with the exception of quotes from Breguet's notes, Sabrier ignores design, limiting himself to a few obscure diagrams and some superficial, and often equally obscure, comments. The obvious example is the distinction between watches with a centrally mounted rotor and those with a pendulum-like weight pivoting at the edge of the movement, which are conceptually different. Sabrier glosses over this and so glosses over very important design principles.

There is one area in which I am sure Sabrier is an expert with vastly more knowledge than myself. That area is watch identification. As Biver also notes in his preface: "It was ... necessary to determine the true origin of the watches that were sold. ... In most cases (Sabrier) was able to establish the workshop where the watch was made; if not, he at least determined the watch's geographical origin." But Sabrier presents information on origins as facts, without any details and often without dating the watches, and makes no attempt to teach the reader how to recognise the features of watches which enable locations to be determined. It appears he does not want to share his expertise with others.

It is likely that Biver is right, and future researchers will rely on this book. In which case progress in the history of watchmaking will be set back by many years. Despite serious faults, the books of Jaquet & Chapuis and Flores remain the best and most important books on self-winding watches.

If the reader wants a coffee-table book, full of excellent photographs, and ignores the text, then the book might be worth owning. So I expect the average collector and the dealer may well find it a useful addition to their library. But if you are serious about horology then treat it with skepticism and great care.

The first three chapters on the origins of self-winding watches have to be considered together, because they are not chronological.

Chapter 1, "Origins and developments of the invention", begins with a recapitulation of part of the vague and inadequate evidence for an early invention (see Jaquet & Chapuis for a much better coverage). This is followed by a little (but far from all) of the evidence for the 1770s development by Abraham Louis Perrelet.

Sabrier then quotes a register entry relating to a report describing a watch provided by Sarton, but he does not provide the report itself. This report is the earliest, detailed description and drawing of a self-winding watch, which has a rotor, as opposed to the pendulum form of self-winding mechanism. (A translation of the text of this document is in the English edition of Jaquet & Chapuis, pages 66-68,

and an explanation of the mechanism appears on pages 48-51. Joseph Flores "Perpetuelles a roue de rencontre" provides a facsimile of the original text, the accompanying diagram and an explanation.) Sabrier then states that Sarton's watches were "almost certainly" made in Neuchatel. He uses one page of the accounts of Philippe DuBois to support this, which shows that Sarton was a merchant (Marchand Bijoutier). Then, without explanation, he notes that inventors signed their watches (although Perrelet didn't), but the makers are usually anonymous, and goes on to comment that often the style of watches betray their origins.

However, Sabrier makes no explicit attempt to draw conclusions from this information, leaving it to the reader to deduce that he is implying that Sarton was not a watchmaker and so could not have designed and made an self-winding watch; and, anyway, if he had invented it he would have signed it. This indirect approach, together with providing only selected evidence is misleading. For example, the page of accounts used to show that Sarton was a merchant comes from Philippe DuBois' "Grande Livre A - I", page 209. This shows purchases from 1786 to 1793 totaling £221,498, and such a large amount indicates that Sarton was a dealer, buying from DuBois and selling to retailers. (Although prices varied a lot, this amount must represent about 5,000 watches.) But an earlier account book (DB No 4, pages 82 and 83, covering 1777 to 1785) lists "Monsieur Sarton Mre. Horloger (master horologist) a Liege", and his dealing does not negate the fact that he was a highly skilled clockmaker (although possibly not a watchmaker). As noted below, the complete omission of Sarton's report can only be because Sabrier would have great difficulty explaining it, as it contradicts his opinions. (I have had the opportunity to examine the DuBois account books up to 1824. Only one set of entries refer to Abraham Louis Perrelet; from 1761 to 1763 Perrelet "horloger au cour du village" was paid £151-14 for finishing. Later references refer to different people, except possibly one in 1763-64, but this is for six simple movements. Unfortunately, nearly every sale is for "merchandise". However there are some explicit mentions of repeater watches and so it is reasonable to assume "merchandise" refers to simple watches. Nowhere are self-winding watches mentioned.)

The rest of the chapter illustrates some later self-winding watches up to the 1850s. This is presumably the "developments" part of the title, but there is no attempt to discuss the mechanisms and no mention of why these particular watches are worth listing and not others. It is a rather pointless summary.

What is clear is that Sabrier is not an historian. He provides only selective evidence, and there is no analysis of it, let alone interpretation.

Chapter 2, "Abraham-Louis Perrelet", begins by paraphrasing Jaquet & Chapuis and then cites documents indicating a pre 1777 invention of an self-winding watch in Neuchatel stating that "the name of Abraham-Louis Perrelet first appears ... in a letter dated May 7, 1782". Which is true, but Sabrier conveniently ignores earlier, 1777 documents which refer to a Perelet and a Perlet! The difference in spelling may be unimportant, but it cannot be brushed under the carpet. What we do know is that someone (probably Perrelet) made self-winding watches some time before 1777. (Much later in the book, Sabrier states as a fact, but without any evidence, that Perrelet made them in 1770, but around 1775 seems more likely.) Sabrier continues "their movements, with verge escapement with fusee and chain, generally have a characteristic winding device with a weight pivoting in the centre of the back plate" and illustrates the extant rotor watches (with unexplained diagrams). The

implication, totally without justification, is that Perrelet invented this design and made at least some of these watches. However, none of the extant watches are signed by Perrelet, none can be dated accurately, and, although there is some evidence suggesting a Neuchatel origin (explained by Jaquet & Chapuis but not by Sabrier), there was at least one other maker in the region (again see Jaquet & Chapuis).

Only the first 3 pages of this chapter concern Perrelet, and the latter parts illustrate various rotor movements.

Finally, Chapter 3, "Earliest developments" vaguely describes two pendulum-style watches with verge escapements and barrel remontoirs. There a diagram of the remontoir mechanism which is completely unintelligible without a good explanation, and a completely incorrect statement: that the remontoir "was used in these two watches in order to overcome the difficulty of maintaining the wheel train under tension during winding." (As the watches have going barrels this cannot be a problem and actually the remontoir was used to overcome the very large lack of isochronism in the verge escapement. Which is why normal verge watches must use a fusee, and why the most technically interesting self-winding watches are those with verge escapements.) Anyone interested in these fascinating watches has to read Flores "Perpetuelles a roue de rencontre" where the mechanism is carefully analysed.

After the meager six paragraphs of text, Sabrier drops a bombshell: "Perrelet solved this problem by using the complex differential wheel train described in detail to the Paris AcadŽmie des sciences by Hubert Sarton in 1778." Not only is this in the wrong chapter, it is patently dishonest. What Sabrier does not mention is that his unsubstantiated view that Perrelet invented the rotor watch necessarily implies that Sarton was a liar and a cheat, because he got the design published as his own in the memoirs of the Paris Academy!

Elsewhere Sabrier is a little more direct. In the May 2007 Antiquorum catalogue "Important collectors' wristwatches, pocket watches, clocks and horological tools" he wrote "In the late 1770s, (Sarton) made a trip to Le Locle, where he was able to examine self-winding watches made by Abraham-Louis Perrelet. Afterwards, upon his return to Paris, he filed a document with the Paris Academie des Sciences dated December 23, 1778." And so he explains why he considers Sarton to be a rather mean character. But Sarton may never have visited Le Locle and his dealings with Philippe DuBois were probably through the travelling salesmen sent by Philippe throughout Europe. (In a small book "DuBois 1785, Histoire de la plus ancienne fabrique suisse d'horlogerie", Chapuis graphically mentions a later trip: "The three sons of Philippe Du Bois undertook long voyages; the inventory of 1823 mentions three post chaises. These healthy and robust mountain dwellers did not fear tiredness nor the difficulties which the voyages represented at this time. Sometimes disorders (wars or revolutions) burst in the regions which had to be crossed. Thus Charles Du Bois tells in his memoirs that he had to pass by Waterloo shortly after the famous battle and that the spectacle of thousands of unburied corpses and the burned farms was horrible to see, so that the image of this field of carnage haunted his spirit for a long time. However the results of these voyages were always considerable.") Even if Sarton had visited Perrelet it is not sufficient evidence to accuse him of blatant plagiarism; after all, he may have done so to get Perrelet to make a watch for him to his design.

The absurdity of Sabrier's accusation is obvious for two reasons. First, Sarton would not have "returned" to Paris; he lived in Liege. And second, Sarton presented a watch and not a document to the academy; the document was written by Le Roy and Defouchy after examining the watch. Of course, the reader would not know this because Sabrier has conveniently omitted the report from his book. Although we are concerned with events in a very narrow time-frame, about 1775 to 1778, there is not much doubt that Perrelet made self-winding watches before Sarton. What is in doubt is what type of mechanism these watches had, and, unless we are to defame Sarton, we must give him the credit for the rotor design.

In addition to a photographic survey of watches, Chapter 4, "Louis Recordon", makes some interesting and curious statements.

First, Sabrier is happy to accept Recordon's 1780 patent, whereas he is happy to reject Sarton's "patent"). Why?

Second, Sabrier notes an 1863 statement (generally regarded to be reliable) that the "earliest self-winding watches, made by Abraham-Louis Perrelet," were acquired by Breguet and Recordon. But he ignores the obvious implication: As Breguet "improved" such watches it is very likely that Perrelet's watches were the pendulum style, as made by Breguet and Recordon; which, of course, allows the unacceptable view that Sarton was the inventor of the rotor style! And he notes that Breguet was probably the maker of the watches patented by Recordon and concludes "it was Abraham Louis Breguet who succeeded in making ... watches according to the principles laid out by Recordon" in his patent. As this statement is repeated in other words, it is apparent that Sabrier believes Breguet copied and improved Recordon's invention. This reversal of the common opinion that Recordon patented Breguet's design, is presumably because he does not understand the function of patents, which is primarily to control the market and prevent competition. Certainly the patent must describe something novel, but novel only in England and not necessarily a new invention. So a patent did not preclude copies of foreign ideas. (I leave it to the reader to deduce why I do not think that this argument applies to the report on Sarton's watch.)

Third, because of two more errors, it seems that Sabrier is not technically competent; which explains why this book is devoid of technical explanations. To begin, he states that the "winding system was so effective that a locking device was necessary to ensure the mainspring would not break due to overwinding". Although superficially correct, it is true of any self-winding system and is not specific to Recordon's design. And then he writes that "Breguet greatly improved the device's efficiency: two tandem barrels allowed him to use stronger mainsprings ...". But the barrels have nothing to do with the self-winding device and their purpose was to enable weaker, longer mainsprings to be used, which improve both running time and isochronism. (With the exception of one understandable error, referring to copper instead of brass, the English translation is excellent, and so these errors must be in Sabrier's original text. Anyway, in the next chapter Breguet is quoted: "two mainsprings, each of half strength".) In addition, Sabrier mentions that Recordon's system evolved, but he says nothing at all about what this means or how it evolved.

Overall, I found the chapter to be superficial.

The fifth chapter, "Abraham Louis Breguet and his students", begins with a translation of Breguet's description of his self-winding watches, which occupies 20 pages. Unlike Jaquet & Chapuis, which has an annotated translation of the same text, Sabrier does not comment on the description, leaving it to the reader to comprehend a somewhat obscure text. Then a number of watches are illustrated, providing a good pictorial survey. The chapter concludes with a discussion of watches by Oudin and Mugnier. This begins by mentioning and illustrating a watch by Oudin in which the whole movement oscillates in the case, but Sabrier does not bother to explain the mechanism.

Chapter 6, "The Jaquet Droz and their circle", begins with a long biography which is primarily about clocks and automata, and we must wait for many pages before watches are mentioned. Then, after a brief look at the Jaquet Droz accounts, a number of watches are illustrated and described, including a few watches signed by Liverpool makers. Again there are no technical details and comments such as "unusual stopwork" are not explained.

It is interesting that, to this point, the structure and content is very similar to Jaquet & Chapuis' book, and I get the impression that Sabrier has based his writing on that book; perhaps to the extent of paraphrasing some bits. The main difference is that Sabrier's book has much less text and many more, better illustrations.

The three chapters titled "Organisation of production in ..." Switzerland, France and Germany, have nothing at all to do with production, let alone its organisation. Other than noting that most Swiss watches were based on ebauches from a few workshops (obvious), the chapters on Switzerland and France simply illustrate watches from different makers with comments on their underlying similarities. The superficiality is clear. First, most watches are not dated and for the few that are, no explanation of the dating is given; which is especially concerning with the early, pre 1780 watches. Second, there is no technical information. For example, Sabrier writes that several French watches have "an unusual and very characteristic winding system" without providing even the briefest comment on what this is. Third, a pendulum-style watch is illustrated and we are told that "under the dial one finds the signature 'A. L. Perrelet'. This famous watchmaker is today considered to be one of the inventors of the self-winding watch, although all his early watches used the primitive system with a rotor". As this pendulum watch may be the only self-winding watch signed by Perrelet (certainly it is the only one I have ever heard of), and there is no evidence that he ever made watches with rotors (although he may well have done so for Hubert Sarton), and the rotor system is in no sense primitive, we must treat this information as pure, unjustified supposition. (I suspect the vague phrase "one of the inventors" refers to Recordon. Also, I wonder if Perrelet would have been "famous" if he had not been involved with self-winding watches.) And fourth, there are five diagrams of a French watch mechanism, but as there is no explanation these are obscure and pointless.

Except for its first two pages, the chapter on Germany is not significant. There are two pages on clocks (!), a page on, and three photographs of, watches, followed by seven pages of biographies of the Liebherr and Mahler families. These biographies are printed on coloured paper with a border, entirely different to the rest of the book. So I suspect they were written by someone else. As Sabrier doesn't bother providing any references this is quite possible.

The first two pages of the chapter contain a probably unintended bombshell! In presumably his own words, Sabrier describes a report on an self-winding watch invented by Joseph Tlusios. We are told that this report appeared in the "Leipzig Newsletters", but Sabrier does not provide a date, let alone a facsimile. This might just be acceptable until we read "Two years later 1777 ..." there is a report in "L'Esprit des Journaux Francais et Etrangers" on another such watch invented by Joseph Gallmayer and the report is given in translation. At which point, presumably because Sabrier doesn't consider this information interesting enough to warrant a comment, he passes on to German clocks, without noting that the 1775 German invention is contemporary with or perhaps earlier than Perrelet's invention! And instead of including this remarkable report in the first two chapters, he hides it away near the end of the book!

The last three chapters cover later watches.

Despite its title "Contemporary self-winding watches", chapter 10 looks at 19th and 20th century watches. It begins with an absurd statement. After noting that self-winding watches were developed so that their cases could be sealed, Sabrier writes: "This is why research and development of this type of watch practically ceased when, after the Second World War, watches that could be wound and adjusted by the pendant came into general use." Even if we replace "Second" with "First", anyone with an average knowledge will know that this is patently ridiculous. Which Sabrier realises, as only a page later he contradicts this view. (It may be said that I harp on "little" errors. But most little errors indicate sloppiness or poor understanding. Either way, a competent writer or editor should have picked up and questioned the flaw and made sure it was eliminated.)

The chapter then discusses keyless pendant winding and setting, again without any design information, which is a pity as the early developments before those of Adrien Philippe deserve a careful treatment. It then surveys the manufacture of watches throughout the period covered, including those of Lange & Sohne.

In contrast to the rest of the book, chapter 11, "Self-winding wristwatches", is a very good descriptive history. But, like the rest of the book, it does not provide adequate technical information. This is highlighted by the fact that the slipping mainspring (an essential design feature of most self-winding wristwatches) is ignored!

The final chapter, "New developments in self-winding watches", is a strange mixture. It begins with an 1868 design (hardly new), followed by purse watches and car clocks. It then illustrates modern watches by Piaget, Corum, Richard Mille, F. P. Journe and Hublot. These sections are more advertising than useful text.