

ABRAHAM-LOUIS BREGUET'S LEGACY
CARRIES ON AT THE MODERN-DAY
HOUSE OF BREGUET

Footprints

OF INVENTION

Last May, nearly two months before his death, Nicolas G. Hayek, president and CEO of Montres Breguet, prevailed in a heated bidding war during a Patrizzi & Co. auction in Geneva. His prize consisted of 354 pages of documents that were dictated by Abraham-Louis Breguet from 1818 until his death in 1823. The papers include numerous renderings as well as Breguet's personal perceptions about the most significant horological discoveries; perspectives on his contemporaries, including Graham and Le Roy; the history of his firm; and the histories of different calibers, from those of simple, single-hand watches known as *souscriptions* to complex repeaters. He discusses marine chronometers and the invention of his balance spring, and he introduces the term isochronism and his concept for the tourbillon. The manuscript is hailed as one of the most important horological documents in existence, an accolade supported by the record price it commanded: 2.3 million Swiss francs (about \$2,078,000).

BY LAURIE KAHLE

A-L Breguet
manuscripts

Nouvelles observations Théoriques et pratiques
Sur l'horlogerie,
pour l'usage civil, l'Astronomie et la Marine.
Par M. Breguet.

Esquisses de... livre premier

(commencement)
Les horloges à répétition
d'horlogerie dont nous
nous proposons de donner
ici la description sont
destinées à régler
l'emploi du temps dans
les usages les plus ordinaires
de la vie. C'est
appulons usage civil;
Ces emplois
la division du temps
se trouve indiquée dans
en heures, en quarts d'heure
en demi quarts et en plus
minutes, sur les cadrans,
et par un autre moyen
que l'on connaît sous le
nom de répétition et
de sonnerie. C'est pour la



Antique Breguet pocket watch
No. 1188 with tourbillon movement



Abraham-Louis Breguet

BREGUET'S PROLIFIC HOROLOGICAL ACHIEVEMENTS INCLUDE THE TOURBILLON, FOR WHICH HE WAS AWARDED A PATENT IN 1801.

Now in residence at the brand's museum located in its Paris flagship store, Breguet's papers are among the seven most important manuscripts ever sold, sharing the distinction with the writings of Da Vinci, Lincoln and even the Quran.

With its exclusive claim to the father of modern watchmaking, Breguet the brand is uniquely poised to wrap itself in the mantle of Breguet the man, whose prolific horological achievements include the development of self-winding perpétuelle watches, the introduction of gongs for repeating timepieces, the first shock protection for balance pivots and, of course, the tourbillon, for which he was awarded a patent in 1801. While the revered Breguet legacy infuses each watch in the modern collection (as well as those of other companies), the brand's stewards understand the importance of continuing its forefather's dedication to advancing the art of watchmaking with groundbreaking horological achievements for our time.

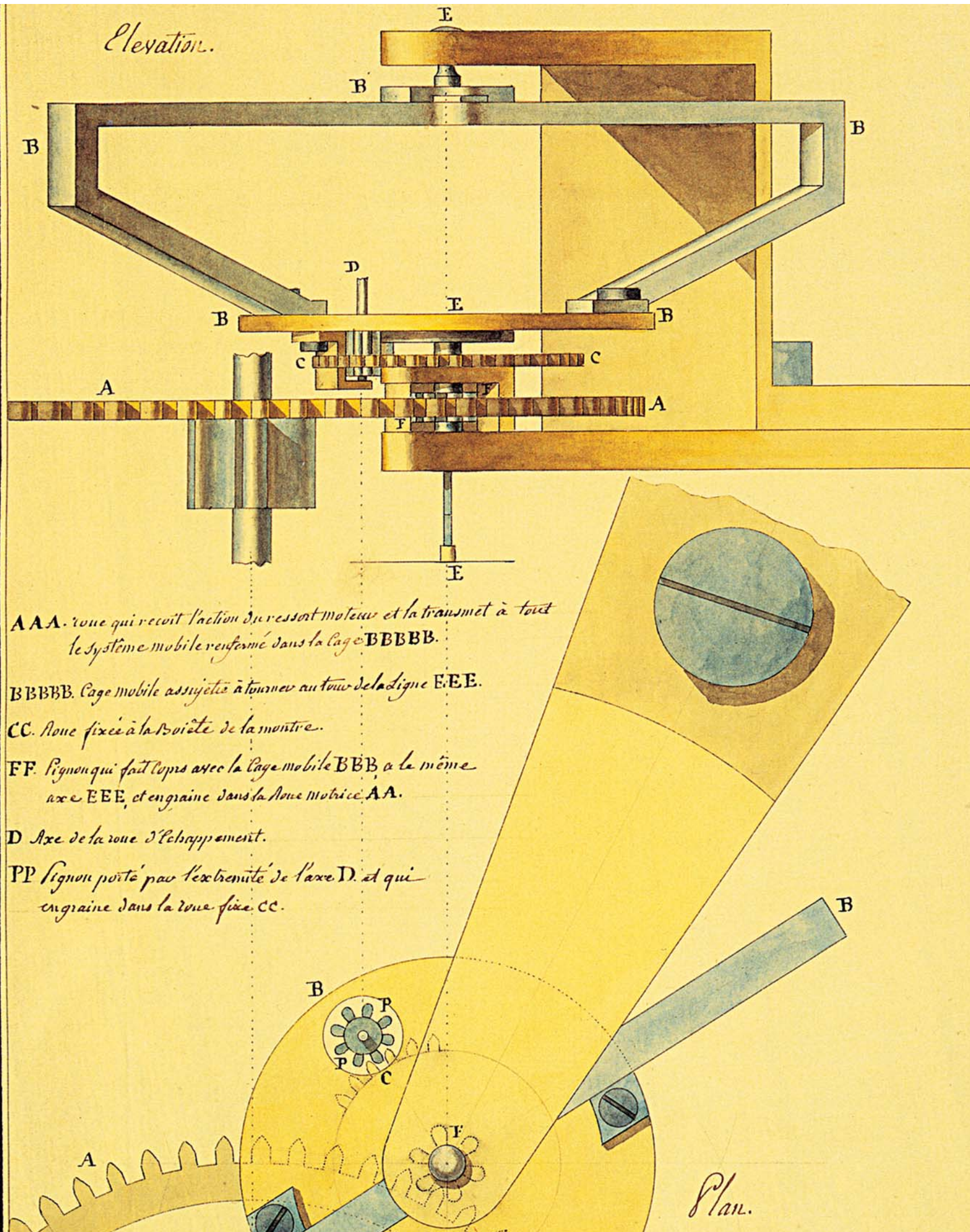
"Basically, they are drawing on the company's pocket watch heritage while also focusing on a new generation of collectors who are interested in innovations, such as the silicon escapement," says Julien Schaerer, watch director and auctioneer at Antiquorum. "A lot of collectors appreciate Breguet's simple, classic, elegant look—it's almost 100 percent pocket-watch inspired in terms of design." Schaerer adds that the Tradition collection is a prime example of how Breguet has used pocket watch design as a jumping-off point to create an entirely new and thoroughly modern aesthetic.

Launched in 2005, the Tradition collection pays homage to the *souscription* pocket watches of A-L Breguet. "Tradition is the result of the personal demand of Nicolas G. Hayek, who, in 2002, requested the development of a new movement with great reliability and an unusual aesthetic that was clearly Breguet but also something really new," explains Christian Lattmann, vice president of

product development at Montres Breguet SA. "After several internal discussions with engineers, watchmakers, designers and restorers of antique watches, we defined the codes of this new collection to be absolutely unique and revolutionary: for the first time, the escapement, the balance wheel and the bridges were displayed on top of the plate and not, as is usually the case, underneath."

Perhaps the latest Tradition incarnation, the platinum 7047PT, best exemplifies Breguet's current quest to merge heritage with high-tech watchmaking. While inspired by the design of the first tourbillon pocket watches devised by A-L Breguet, the timepiece breaks technical ground with, among other things, a new patented silicon balance spring that incorporates Breguet's signature terminal curve.

One of A-L Breguet's landmark inventions was the overcoil balance spring, a vital organ in the movement that regulates the flow of timekeeping. Breguet sought to improve its



Drawing of Breguet tourbillon mechanism



← THE BREGUET TRADITION 7047PT

- + 41-mm 950 platinum case
- + Silvered, hand-engraved 18-karat gold off-center dial, individually numbered
- + Breguet hands in polished blued steel
- + Manual-winding Caliber 569 finished in anthracite gray, adjusted in six positions
- + 60-second tourbillon positioned at 1
- + Breguet silicon balance spring
- + Power reserve indication on the barrel drum at 9
- + Fusée-and-chain transmission visible at 5

THE TRADITION 7047PT EXEMPLIFIES BREGUET'S QUEST TO MERGE HERITAGE WITH HIGH-TECH WATCHMAKING.



performance by altering the spring's terminal curve by slightly raising and bending the end to improve its isochronism. Conceived in 1795, Breguet's novel spring remains the reference point for the industry. But modern materials have presented opportunities to improve upon the past. The first decade of the 21st century ushered in a joint venture between Breguet, the Swiss Centre for Electronics and Microtechnology and two other Swiss watch houses that produced a simple, flat balance spring fabricated from silicon, watchmaking's high-tech material du jour.

Compared to their metal forebears, silicon balance springs are lighter and harder, while also more resistant to corrosion, shocks, magnetic fields and deformation caused by the pull of gravity. In 2006, Breguet introduced its first wristwatches with silicon balance springs and escapements. While the flat silicon balance

springs have performed satisfactorily over the past four years, Breguet wished to push the advancement further by introducing a silicon balance spring with a terminal curve. While it may sound simple, the bending of silicon represents a daunting technical feat since the rigid material is devoid of malleability. After completely rethinking the production process, Breguet engineers eventually mastered the curve in its silicon balance springs, which endow the new Tradition 7047PT models.

Interestingly, Breguet's watchmakers paired the space-age silicon material with an ancient and arcane fusée-and-chain transmission system. Based on a concept attributed to Leonardo Da Vinci, the fusée-and-chain transmission, which evokes the chains and conical gear wheel assembly of a 10-speed bicycle, solves the issue of declining torque in the winding train by regulating the distribution of power for enhanced accuracy. Power flows from the mainspring barrel to the conical fusée by means of a miniscule handmade chain. As the barrel turns, the chain reels off the cone (which is positioned

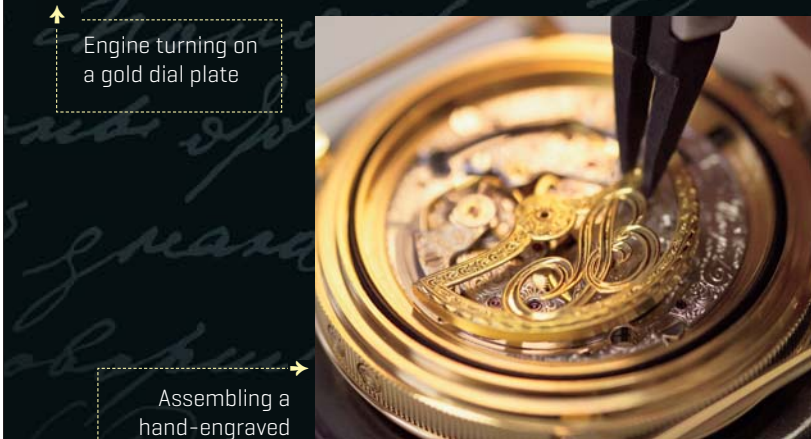
on a wheel geared to the power train) from top to bottom, using leverage to ensure constant torque and the even distribution of power from the train to the escapement and balance.

"The chain and fusée equalizes the power of the mainspring," says Antiquorum's Schaerer, who notes that the system has also been implemented in A. Lange & Söhne's Pour le Mérite watches. "It's a nice technical aspect, but it's probably much more expensive and time consuming to construct, and I'm not sure it makes a huge difference in terms of pure functionality."

That expense and exclusivity, however, is precisely why Breguet used it for this premier model. "We chose it for the same reasons that the watchmaking field abandoned it," says Breguet's Lattmann. "It is extremely hard to implement, but it is also particularly spectacular. The complete movement overview offers a great opportunity to see this fusée-and-chain transmission coupled with a patented larger tourbillon that we partially made out of titanium for weight reasons. This fusée-and-chain transmission system is all the more ingenious



A polished case component



Engine turning on a gold dial plate



The raw materials of white and yellow gold



Assembling a hand-engraved oscillating weight

because it guarantees a constant coupling with the movement for heightened accuracy over a longer period.”

At Manfredi Jewels in Greenwich, Conn., owner Roberto Chiappelloni has witnessed Breguet timepieces coming in for service bearing multiple engraved dedications, evidence that they have been passed down through generations. “It’s called Tradition because it goes back to the style of the Breguet coin edge case, but it’s bigger than typical Breguet watches to reflect today’s tastes,” says Chiappelloni of the Tradition 7047PT. “They combined the fusée and chain, which is one of the oldest ways of controlling power, with a Breguet overcoil spiral made of silicon, one of the newest materials in watchmaking—there you have the two extremes. The research and improvement does not stop, yet they keep traditional watchmaking in place.”

In addition to the technical aspects of the movement, the Tradition 7047PT’s slick gray aesthetic also reflects the dichotomy of past and present. The exposed works are fabricated from an anthracite-toned metal alloy with a sand-blasted surface finish achieved by employing a next-generation electro-deposition process

using an alloy of platinum group metals to attain a hue that is darker than ruthenium. “Industrial” is how Chiappelloni describes the resulting monochromatic look. “The decoration becomes the motion of the tourbillon and seeing the chain and the gears,” he explains. “It is a combination of classic design with a completely futuristic approach.” Weighing in on the classic side are Breguet hallmarks: engine-turned guilloché engraving on the small hours and minutes dial, blued-steel hands with hollow “apple” tips, a flourish that dates to 1783, and the fluting around the perimeter of the case.

Having garnered patents for the large tourbillon’s titanium balance and cage, the Breguet overcoil balance spring in silicon and a power-reserve indicator positioned directly on the barrel, the 7047PT has racked up an impressive array of patents that would have made A-L Breguet proud. “Breguet’s history is so rich and distinctive,” says Chiappelloni, “but the one thing that really makes it a beautiful story to tell is that almost any classic fine timepiece you are likely to buy today features a Breguet invention.”

866.458.7488, breguet.com