N° 58

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L. LEROY
RARE SCIENTIFIC AND OBSERVATION CHRONOMETER

Circa 1900
Signed *L. Leroy 7 Bd de la Madeleine à Paris*
H. 10.7 cm (4.2 in); W. 17.1 cm (6.7 in); D. 23.5 cm (9.3 in)
Box dimensions: H. 15.6 cm (6.1 in); W. 24.3 cm (9.6 in); D. 30.9 cm (12.2 in)

Historical note: Sold by Leroy in 1913 to Thomas Mercer & Co (the pre-eminent manufacturer and retailer of marine chronometers in Great Britain) who retailed it to Mr. Ferrié.

Reference Bibliography: Tony Mercer, *Chronometer Makers of the World*, NAG Press 1991; Michel Amoudry, *Le Général Ferrié*, Presse Universitaire de Grenoble, 1993; Maison Leroy, *company brochure*.


1210
L. LEROY & Cie


L. LEROY & Cie
N° 1210


RUPTURE - CONTACT


L. LEROY & Cie
N. 1210

L.LEROY

RARE SCIENTIFIC AND OBSERVATION CHRONOMETER

No. 1210 Leroy & Cie on an ivory panel

Rare observation chronometer signed L. Leroy, 7 Bd de la Madeleine à Paris, circa 1900. The main movement is of a typical marine chronometer, with silvered dial and Roman numerals, with first subsidiary dial under the numeral XII indicating the 56-hour power reserve, and second subsidiary dial above VI for the seconds. Signature and serial number in the centre.

Powered by a main barrel with fusee and pivoted-detent escapement, it being prolonged in a square to be used as a stop-start to the additional movement specially made for the transmission of an electrical impulse every second or half-second.

An ingenious cam system allows for the transmission of either an impulse or an interruption of continuous current every second or half second at will.

This second movement; especially designed for this instrument, also works with fuse and chain, cams and electrical switches, and has a power reserve of 7 hours. All these special options are switchable through the front panel, just underneath the main dial.

The chronometer is encased in a rectangular mahogany box with two lids. The first, with a glass panel, provides access to the dials and functions; the second provides access to a bottom compartment containing the key and space to store documents. The lower panel allows for sliding sideways with two holes for winding both movements separately. On the side are placed the three holes for the electrical contactors.

Black text on ivory panel reads: No. 1210 Leroy & Cie

H. 10.7 cm (4.2 in); W. 17.1 cm (6.7 in); D. 23.5 cm (9.3 in)
Box dimensions: H. 15.6 cm (6.1 in); W. 24.3 cm (9.6 in); D. 30.9 cm (12.2 in)

Presented in a padded and numbered mahogany storage box with external handle. In very good condition and perfect working order.

This observation chronometer made by the firm L. Leroy is characteristic of the instruments produced for marine and military use. It is also a perfect example of what was considered to be the most accurate timepiece produced by French chronometer makers during the first half of the nineteenth century. The coveted title 'Clockmaker to the Navy' (*Horloger de la Marine*) successively awarded by the King and then by the State to the most pre-eminent clockmakers, gave Leroy the equivalent recognition of 'supreme master' (*brevet de maîtrise suprême*) in the art of precision timekeeping. Leaving an indelible mark in the history of chronometry, his achievement was consecrated after obtaining 349 medals from the Besançon Observatory – a record that still stands to this day.

The Leroy company archives, comprising sales records of almost 400,000 timepieces, reveal the names of thousands of clients, often famous and powerful figures.[1] A study of the documentation concerning the 'Production nos./Chronometers and Astronomical Clocks', reveals that our chronometer (no. 1210) was sold on 21 May 1913 to Thomas Mercer & Co, one of the most prolific makers of luxury chronometers, and undoubtedly the most reputed firm in its day. As indicated in the records, this purchase was intended for a certain 'Monsieur Ferrié', who it will be shown, was, as an inventor, closely tied to the development of the prestigious firm L. Leroy, established then in the heart of the *Grands Boulevards* of Haussmannian Paris.

After his reputation was cemented at the 1900 Universal Exhibition in Paris, Leroy turned his attention to the development of scientific, military, industrial, and sports chronometry. This led to a collaboration in 1910 between L. Leroy, the aforementioned Gustave Ferrié and the Paris Observatory, to install the first radio time signal transmission station atop the Eiffel Tower, allowing the broadcast by telegraphic code of the national reference time over an area spanning 6000 km (3728 mi). A master clock known as a 'constant-pressure regulator' drove the transmission system. Accurate to 1/100 of a second, protected by heavy glass domes and lowered into wells twenty-five meters deep to avoid vibrations, these timekeeping instruments were the most precise and reliable built to date. In the 1920s, they became the basis for the reference time used by the majority of national observatories worldwide, from China to the United States, as well as Switzerland.

[1] We are grateful to Jean-Claude Sabrier, Honorary Expert at the Cour d'Appel de Paris, and holder of part of the Leroy company archives, for having kindly transmitted a copy of the records referencing our chronometer.

As such, it is possible to suppose that Ferrié, just nominated president of the International Commission of Longitudes in 1912, used his Leroy chronometer to measure the precise time from the summit of the Eiffel Tower. By inventing the first regularly scheduled time service, which standardized time nationwide, this ingenious engineer, who later became general, also made it possible for ships to determine their position at sea, revolutionizing the way longitude was determined.

The summit of the Eiffel Tower in 1912 showing the attached antennas (postcard).

It is also thanks to Ferrié that in 1904 the Eiffel Tower officially became a military radiotelegraph station, and served as of 1921 as an antenna mast for broadcasting radio programs. Furthermore, these countless benefits were able to spare the now-famous monument from certain demolition; the tower was built for the 1889 Universal Exhibition in commemoration of the centenary of the French Revolution and was scheduled for demolition in 1909, when its 20-year lease expired.

GUSTAVE FERRIÉ (1868-1932)

Source gallica.bnf.fr / Bibliothèque nationale de France

When on 21 January 1904 the Eiffel Tower became an official wireless telegraph communications station, Gustave Ferrié was in charge of the exploration and implementation of wireless telegraph stations for military purposes, using the tower to mount antennas for long-range telegraphy.

In 1914, Ferrié, then a colonel, was named director of the committee of French military radio communications (TSF), setting up a radiotelegraphy network during World War I. With the strategic role of the Eiffel Tower in Paris confirmed, another station was built in Lyon for safety reasons. Ferrié also further developed military communication research, equipped the French and Allied forces, and developed a colonial network thanks to this new communications technology. Promoted to Brigadier-General in 1919, Gustave Ferrié became General Inspector of military telegraphy and transmission services. In 1921 he received the Osiris Prize, the most prestigious prize medal awarded by the Institute de France, and in 1922 he was elected member of the Academy of Sciences. By the end of his life, he presided over thirty-two international scientific organisations.

Every year, the Mayor of Paris awards the General Ferrié Prize to a researcher who has distinguished him or herself in the field of communications.

L. LEROY
LUXURY CLOCKMAKER AND MASTER OF EXTREME PRECISION

The origins of the Leroy firm can be traced back to the eighteenth century, and more precisely to 1747, when Basile Le Roy (1731-1803) began his apprenticeship with Sr. Joseph Quétin, a master clockmaker established in Paris. A few years later, after becoming a master clockmaker himself, Basile with the help of his father, opened up his first shop under the covered arcades of the Palais Royal – where it remained for over a century.

After the French Revolution, Basile Le Roy established his reputation by selling high-quality traditional and decimal timepieces with or without striking mechanisms. In 1805 he was named 'Clockmaker to her Imperial and Royal Highness, Madame, the Mother of His Majesty the Emperor', and by 1810 he was producing clocks for officers in Napoleon's army.

In 1828, his son Charles-Louis Le Roy took over the family business, which at the time counted at least fifty employees. Accumulating the titles of Clockmaker to the Dukes of Chartres and Bourbon, then Clockmaker to the King and the Duke of Orleans, as well as Clockmaker to the Ministry of the Navy, the firm of Le Roy & Fils continued to pursue its expansion. Casimir Halley Desfontaines, a businessman of great talent and foresight, acquired the firm in 1845. He gave the firm renewed prominence by opening a first shop in London in 1854 at 211

Regent Street, which was followed quickly by another location on New Bond Street.

In 1863, Leroy & fils was officially named Clockmaker to the Queen Victoria, a supreme and warranted honour, that for a foreign firm, not least a French one, was the ultimate form of recognition. Present at all the national and European exhibitions from Madrid to Vienna and London to Paris, Leroy & fils accumulated an impressive number of prizes, medals and other distinctions of honour. However, it was in 1888, with the arrival of Louis Leroy (1859-1935), first as partner then as owner, that the firm changed its name and became known as L.Leroy & Cie. At the head of a company known throughout Europe for the quality of its timepieces, the young Leroy decided to establish a manufacture in Besançon, the historical centre of French clock and watch manufacturing. Pursuing the same philosophy of extreme precision, the Besançon workshops produced an impressive quantity of certified chronometers. Of smaller size, these timepieces were intended primarily for marine use (commercial and military), however businesses and sports federations also found them useful. With the help of his brother Léon, he opened a new storefront and workshop in Paris located at 7 Boulevard de la Madeleine, in the heart of Haussmann's *Grand Boulevards*. The success was immense, with sales and delivery records showing the names of the most famous artists, industrialists, politicians and philosophers of the twentieth century, including Franklin D. Roosevelt, Alfred Nobel, Antoine de St. Exupéry, Ettore Bugatti, George Sand and Alfred de Musset, Marcel Proust and Henri Matisse. The firm's reputation for excellence was confirmed at the 1900 Paris Universal Exhibition when it received the Grand Prix for its "Leroy 01" timepiece. An absolute reference in the field of horology, with a movement composed of 975 parts, the "Leroy 01" became the iconic symbol of French luxury timepieces worldwide.After the death of Louis Leroy in 1935, Léon moved the company to 4 rue du Faubourg Saint Honoré, where the headquarters remained until the 1980s.

Demonstrating a true synthesis of all the technical and artistic developments in the art of timekeeping since the middle of the eighteenth century, L. Leroy is today among the finest names in French chronometry and horology. The technical expertise and attention to detail are at the very foundation of the company's unfailing reputation for excellence.


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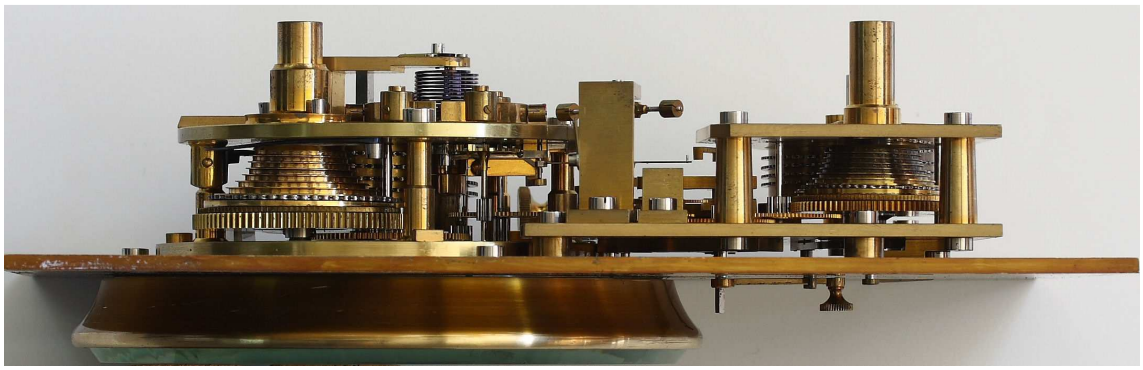
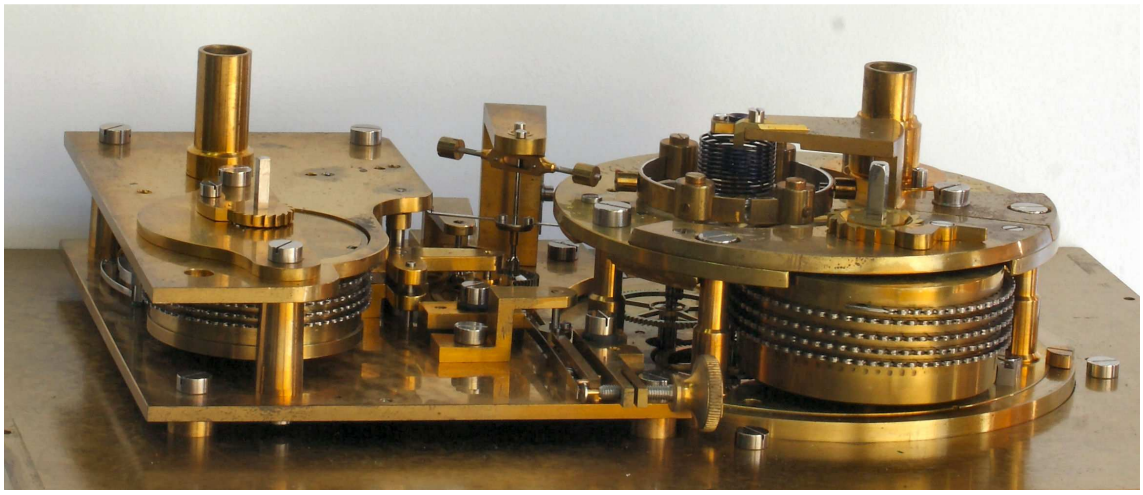
CONTACT
MARCHE
ARRÊT
7 6 4 3 2 1 0


L. LEROY & C.ie
Date 190 Huiles

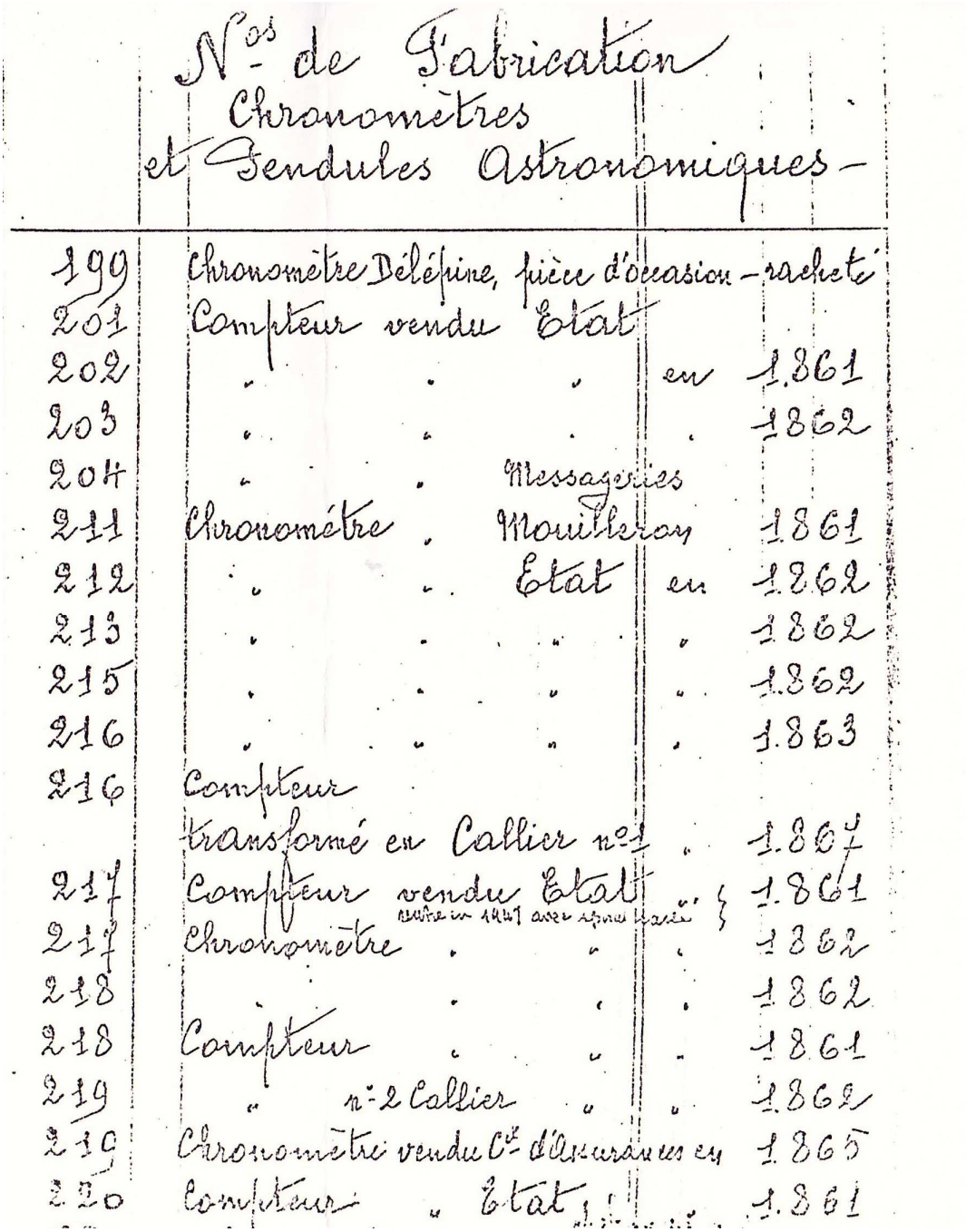

Leroy & Cie
No 1210





APPENDIX

L. LEROY ARCHIVAL DOCUMENTS



N^os de Fabrication
Chronomètres
et Pendules Astronomiques –

199	Chronomètre Déléfine, pièce d'occasion – racheté	
201	Compteur vendu Etat	
202	" " " en	1861
203	" " " "	1862
204	" " Messageries	
211	Chronomètre " Mouilleron	1861
212	" " Etat en	1862
213	" " " "	1862
215	" " " "	1862
216	" " " "	1863
216	Compteur transformé en Collier n°1 "	1867
217	Compteur vendu Etat "	1861
217	Chronomètre " " "	1862
218	" " " "	1862
218	Compteur " " "	1861
219	" n°2 Collier " "	1862
219	Chronomètre vendu Cie d'Assurances en	1865
220	Compteur " Etat "	1861

1199 Compteur à l'atelier vendu occ. [illegible] 1930

1.200 Chron. Johan. et 1200 Compteur Angulo 29 Nov. 12 repris X.bre [illegible] 2000

1.201 Pend. Ast. sec. ext. Mayet Tissot Moiré [illegible] Rio

1.202 Chron. Joh. vendu Uruguay 7 mars 1913

1.203 " " " " " " "

1.204 Pend. Astron. (Bruel) int. Sec. Sao Paulo 17 mai 13

1.205 Batteur Simple

1.206 " relai Juin 1913

1.207 "

1.208 Chron. Joh. . Pisch. 21 mai 1913

1.209 " " " " " "

1.210 " Mercer 2 corps de rouage int. élect. Ferrié

1.211 " " pts " " " . Washington

1.212 " " " " " " " "

1.213 " " 27 Juin 1913 _ 800

1.214 " " " " 800

1.215 Pend. Astr. contact Obs. Sun Yat sen Canton (Chine) Godey 1923

1.216 Chronomètre Mercer

1.217 Chronographe 2 plumes - Godey, repris en 22

1.218 Pendule 1e qual. int. Observ. Marseille

1.219 " " de Gosselin

1.220 Chronom. Mercer pr double rouage obs. de Kwaza. St Georges [illegible] 1919 Obs. Zi Ka Wei 1920

1061 " "

1.222 Chronom. Observ. ~~[illegible]~~ Inst. Géog. mil. [illegible]

1.223/687 " contact (étalage) G. G. AOF 1929

1.224 Pendule 1e qual. contact Le Cadey

1.225 Batteur (Lhom)

1.226 " " Obs. Bucarest 1928

1.227 Pendule P.C (4e) Ze-Ka-Wei.

1.228 " " (5e). Obs. Paris

1.229 " " (6e) "

1.230 " " (7e) . Edimburgh

1.231 " " (8e)

1.232 Chronomètre . Washington

1.233 " "

1.234 " "

1.235 " Transatlantique

1.236 " "

1.237 " "

1.238 Régul. astron. Ze-ka-Wei

1.239 " Rio-de-Janeiro

1.240 Chronom. L. Leroy d'occ. repris Godey 29 mars 1916.

1.241 Rég. astro. 1e qual. Lég. Marconi

1.242 Chronom. L. Leroy Marine Ital.

1.243 " " " " " "

1.244 " " " "

THE INVENTION OF THE MARINE CHRONOMETER

Until the mid 1750s accurate navigation at sea out of sight of land was an unsolved problem due to the difficulty in calculating longitude. The creation of a timepiece which would work reliably at sea was difficult. The first true chronometer was the life work of one man, John Harrison (1693-1776), spanning 31 years of persistent experimentation and test that revolutionized naval navigation.

About the same time in France, Pierre Le Roy (1717-1785) invented in 1748 the detent escapement characteristic of modern chronometers. In 1766, Pierre Le Roy created a revolutionary chronometer that incorporated a detent escapement, the temperature-compensated balance and the isochronous balance spring: Harrison showed the possibility of having a reliable chronometer at sea, but these developments by Le Roy are considered to be the foundation of the modern chronometer. The innovations of Le Roy made the chronometer a much more accurate piece than had been anticipated (fig.1).

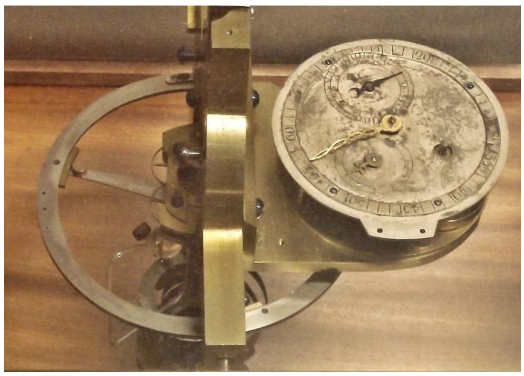


Fig. 1. Pierre Le Roy's marine chronometer, 1766

The greatest strides toward practicality came at the hands of Thomas Earnshaw (1749-1829) and John Arnold (1736-1799), who in 1780 developed and patented simplified, detached, "spring detent" escapements, moved the temperature compensation to the balance, and improved the design and manufacturing of balance springs. This combination of innovations served as the basis of marine chronometers until the electronic era.

Without their accuracy and the accuracy of the feats of navigation that marine chronometers enabled, it is quite likely the ascendancy of the Royal Navy, and by extension that of the British Empire, would not have occurred.