GEORGE STEELE TIFFANY

AND HIS

"NEVER-WIND" CLOCKS.

By Lindsay Bramall, Sydney, NSW, Australia

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According to the US Registry of Births, Joel Tiffany and his wife, Margaret (nee Mason), of Hinsdale, Illinois,USA, were blessed with the birth of a son on 6th May 1872. They named him George Steele Tiffany. Records also show that George married Helen Emily Carter in, Oberlin, Lorain, Ohio in March 1895.

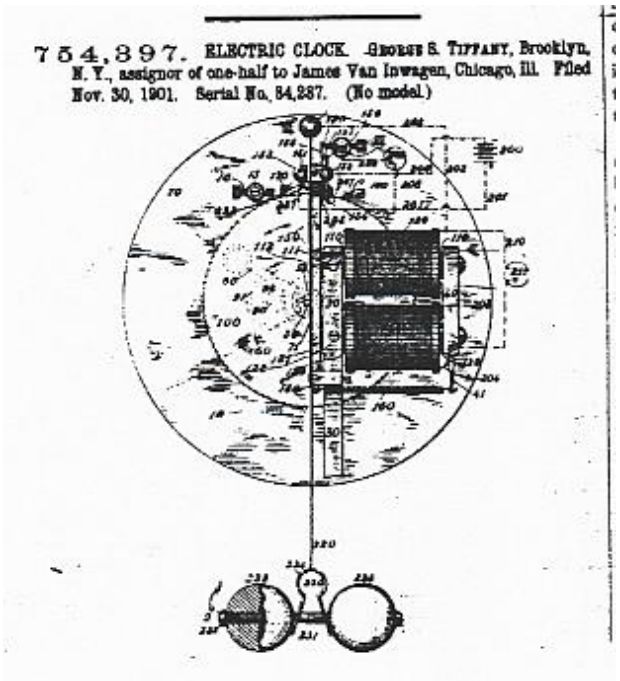
George's education and occupational training remain to be researched but he obviously was conversant with the then latest novelty, electricity and electro-magnetism. His interests must also have included clocks as on the 30th November 1901 he filed an application for a patent, in partnership with his cousin, James Van Inwagen of Chicago, Illinois, for an electric clock. This application was given a serial number 84287.

On 12th December 1903 George and his partner decided to break their patent application into two distinct parts as two separate patent applications. These were for an "Electric Clock" and a "Torsion Pendulum for Clocks".

On 8th March 1904 the patents were gazetted in the US Patents journal and thus George and his partner were granted patent protection for their inventions.

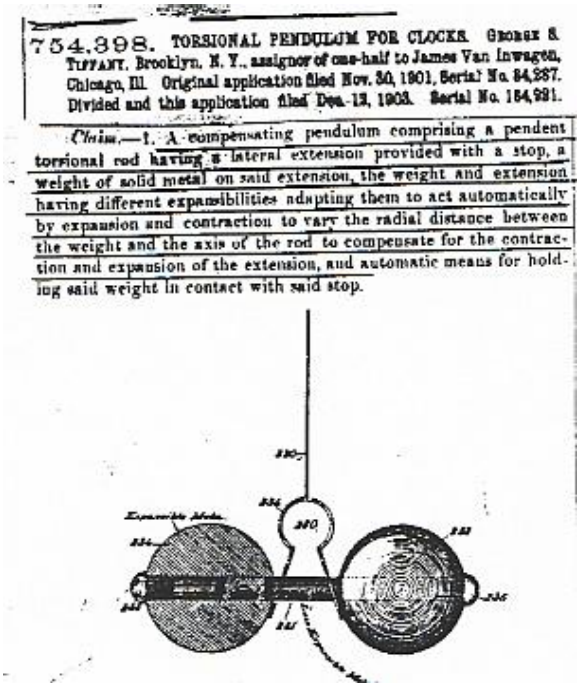
US Patent No. 754 397 was for the "Electric Clock" and US Patent No. 754 398 for the "Torsion Pendulum for Clocks".

The "Electric Clock" patent describes in 26 clauses various combinations of a clock-train, an electro-magnetic drive system, a torsion pendulum, a ratchet and pawl drive system for motion work and a two bob temperature-compensating pendulum. The progression from clause 1 to 26 gradually incorporates, from an initial basic description, more details of the individual features and also attempts to cover every possible alternative. This is an attempt to thwart the breaking of the patent by competition



754,397. ELECTRIC CLOCK. GEORGE S. TIFFANY, Brooklyn, N. Y., assignor of one-half to James Van Inwagen, Chicago, Ill. Filed Nov. 30, 1901. Serial No. 84,287. (No model.)

The “Torsion Pendulum for Clocks” patent covers the two bob temperature-compensating pendulum as mentioned in the “Electric Clock” patent but as a separate patent it is covered for use in any clock (horological) application not just to electric clocks. The pendulum is described in 8 clauses and claims to be temperature compensating due to the use of dissimilar metals in the horizontal support bar and the two bobs. The bobs cannot expand outwards due to “stops” at the end of the bar so they must expand inwards towards, or contract outwards away from, the centre of rotation of the pendulum. The two bobs which slide on the bar are held against the “stops” by a spring clip. The fact that none of the clocks made by Tiffany ever used such a pendulum indicates that his design was as unsuccessful as all other contemporary designs for temperature-compensating torsion pendulums.

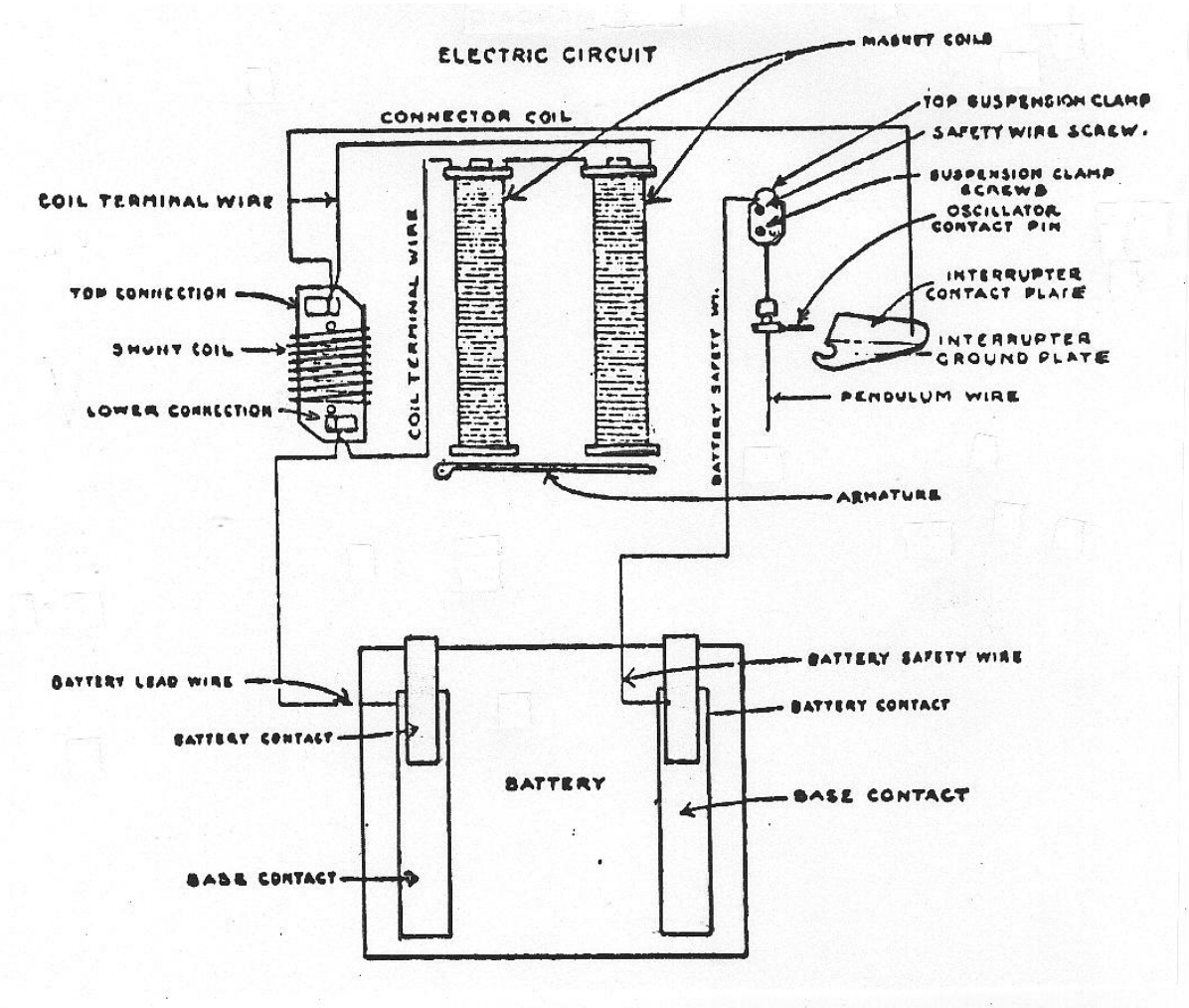


754,398. TORSIONAL PENDULUM FOR CLOCKS. GEORGE S. TIFFANY, Brooklyn, N. Y., assignor of one-half to James Van Inwagen, Chicago, Ill. Original application filed Nov. 30, 1901, Serial No. 84,287. Divided and this application filed Dec. 12, 1903. Serial No. 184,931.

Claim.—1. A compensating pendulum comprising a pendent torsional rod having a lateral extension provided with a stop, a weight of solid metal on said extension, the weight and extension having different expansibilities adapting them to act automatically by expansion and contraction to vary the radial distance between the weight and the axis of the rod to compensate for the contraction and expansion of the extension, and automatic means for holding said weight in contact with said stop.

The patent issued on 8th March 1904 for the “Electric Clock” became the basis for a very successful saleable product and it is obvious from the design of the clock that Tiffany was heavily influenced by the then novel and popular mechanical 400-day clocks from Germany. It must also be realized that electricity was also a late Victorian novelty with a huge range of consumer items available with battery power, including wireless, telephone and even automobiles. It is no surprise then that Tiffany combined these two novelties into one devise, his wondrous, battery-powered torsion pendulum clock! The use of the brand “Never-Wind” was a clever attempt to charm consumers away from the need to wind a clock daily or weekly but at the same time conceal the fact that it was battery powered.

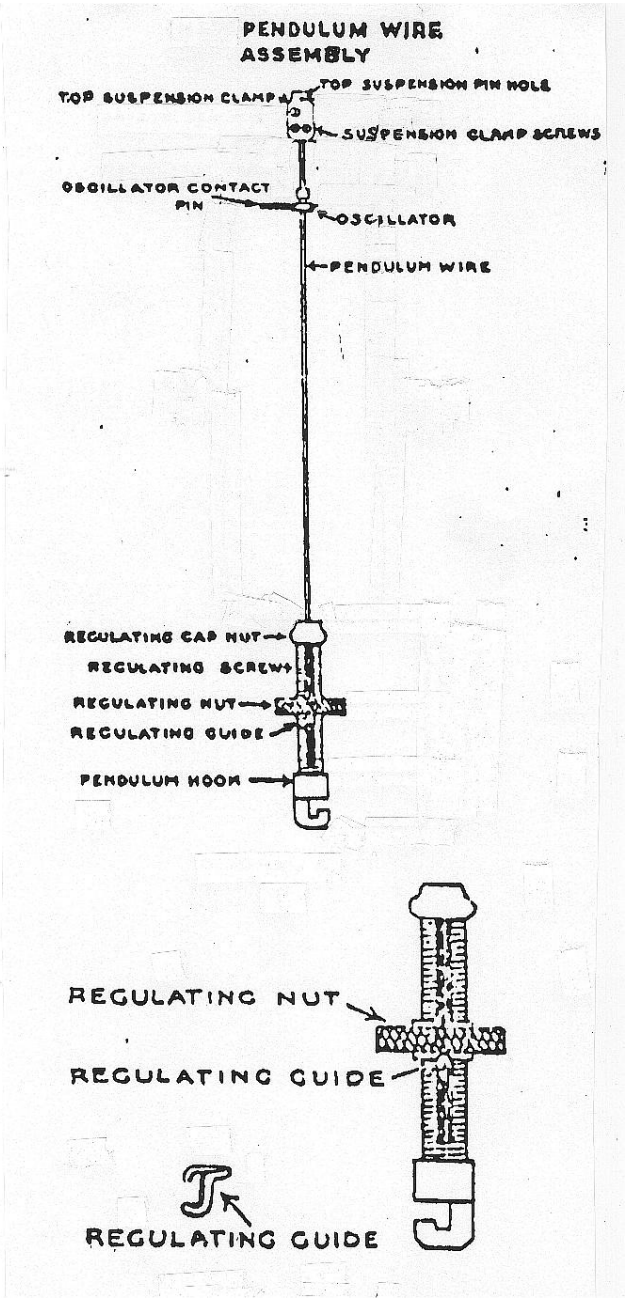
Wondrous indeed was this clock as the method of operation is very simple and the mechanism very compact. Basically the torsion pendulum suspension spring is part of the electric circuit and the single tine fork fitted to the suspension wire at the top end acts as a contact. When the pendulum rotates the tine closes the circuit and electricity flows into the coils and energizes the magnets which pull in the armature.



Two metal extensions of the armature cause, 1. a drive pawl to advance a ratchet wheel one tooth thus advancing the hands and 2. an impulse to be applied to the pendulum and so keep it oscillating. As the hands advance only once per cycle of the pendulum the action is one of readily visible regular “jumps” of the minute hand. The action of the magnet pull in of the armature is also quite noisy and it is therefore quite understandable as to the recommendation that these clocks not be used in the bedroom!

Production began at the Tiffany Electric Mfg. Company factory in New York City in 1914 but George moved operations to Main St., Buffalo, New York in 1917, renaming it the Tiffany Never-Wind Clock Corp. The company remained here until 1922.
The first clocks were a high quality product of outward appearance similar to the 400-day clocks. 4-glass wooden framed models and gilt brass based glass dome models were available. The electro-magnetic actuating system used a double contact design which impulsed the oscillating torsion pendulum twice per cycle. Incorporated into the mechanism was a glass insulator and automatic power cut off if the pendulum bob was removed. The pendulum was a very heavy brass two bob unit with a central built-in knurled thumb-wheel to adjust the bobs in or out. Perhaps influenced also by the early 400-day clocks from Germany, which displayed their patent numbers on the dial, Tiffany’s clocks included the patent date 8th March 1904 below 6 on the enamel dial along with the company address of Buffalo, New York. These marks remained on the dials of all Tiffany’s clocks and some also included a small logo “NTW” in a diamond border, others, “G.S.Tiffany”. The battery was hidden in the base of the clock.

The quality of these early clocks was causing concern and loss of sales so Tiffany redesigned the electro-mechanical actuating system from double to single contacting and introduced stamped brass frames and plated steel bases for his clocks. This lower cost design appeared in catalogues of 1917 so it is obvious the early double contact models were too expensive to compete with the mechanical 400-day clocks. The single impulse mechanism imparted force to the pendulum via a single tine attached to the suspension wire only once per cycle. Adjustment for time rating was removed from the pendulum and it became a rigid double weight bob. Adjustment was incorporated into the bottom suspension block that utilized an adjustable slotted guide, though which the spring passed, to vary the active length of the suspension spring. The battery, a Radio "C" 4.5 Volt triple cell unit, was housed in the base.



This single contact design proved to be highly successful and reliable, thus remaining the basis for all clocks produced until production ceased in the late 1920's. The clocks covered a range of case styles in various price ranges from the cheap small Model 1100 through to the mid-size Model 2000 and a 4-glass brass cased model.

Brochures of the period make great claims about this " revolution in time-keeping after 300 years of development. "Guaranteed 50 years, yet with no cleaning, oiling or repairs required". " Approaches nearer to absolute perfection than the science of time has attained before". Bold claims! Never-the-less consumers brought many of these clocks and it is reported that the Tiffany Never-Wind clocks were the most popular of the battery electric clocks available in the USA.

In 1923 the company had a name change to the Cloister Clock Corp., again in 1924 to the Niagara Clock Corp. and finally in 1929 to the National Magnetic Clock Corp. From a company letter it would seem that the business was still is operation as late as 1956.
Brands for each name change appeared on the dials of the clocks although the clocks remained of the same movement design.
Such brands include Niagara, National Magnetic and Cloister.
The Niagara clock commonly seen is a square oak cased wall clock.
The Cloister clock is identical to the small cheap Tiffany Model 1100.
National Magnetic appeared to come into the market late in the 1920's as their clocks are chrome plate Model 2000 and also very unique Art Deco wooden cased models.

The battery electric clocks, including Tiffany, were beaten into submission by the introduction of AC mains power distribution into the consumers' home and the commercial development of cheap, reliable, small, synchronous electric motors for clocks.

George Steele Tiffany was a man of the moment. He saw an opportunity to make and sell an electric version of the, then rising in popularity, 400-day clock. His design was simple, reliable and efficient, responding to the consumer's interest in new technology. In the end it was technological advancement, which caused the demise of his clock business, but he had reigned supreme for 20 years.

Few Tiffany Never-Wind clocks appear to have been exported from the USA. Certainly there is no record or memory of them ever being represented nor imported to Australia. If any can be found it is most likely to have been brought in as a personal item or as a collectable.

Lindsay Bramall.

NMC Art Deco Mod. 2006 VULCAN

Cloister mid-size Model 2000

Tiffany Neverwind Model 1100
$23 in 1918, $20 in 1919

Tiffany Neverwind Model 2000
$42 in 1908, $32.50 in 1918

National Magnetic Wooden Cased

Tiffany 4-glass model
$26 in 1918