A Unique Canadian Wooden Movement in a Tall Case Clock

By Allan Symons, FNAWCC (CAN)

All photographs were provided by The Canadian Clock Museum.

Introduction: Wooden-Movement Tall Case Clocks in Early Canada

Tall case clocks with wooden movements were available in the 1820s in the Montreal area of the province of Lower Canada (which became the province of Quebec in 1867). These had grain-painted pine cases made in Montreal in a factory set up by several Twiss brothers from Connecticut (including Ira, Joseph, and Russell).

Examples of similar clocks are known with Joseph Balleray dials made in nearby Longueil in the 1830s. All of the 30-hour, weight-driven wooden movements are believed to have been imported from factories in Connecticut. The weights were typically metal cans filled with loose pieces of heavy material. The hand-painted wooden dials had imitation winding holes; the two weights were pulled up daily by hand.

The Canadian Clock Museum's collection of early Canadian clocks includes two complete Twiss examples. The Ira Twiss clock and JB & R (Joseph and Russell) Twiss wooden dial are shown in Figures 1 and 2. The Ira Twiss clock has the original, deluxe burl walnut faux finish and gold-colored pinstripe.

Serendipity!

Serendipity is an excellent word to describe how I discovered the apparently unique clock that is the subject of this article. Most years I attend an annual outdoor antique show in early August on the fairgrounds of the small village of Odessa just west of Kingston, Ontario. During my walkabout of the dealers' booths at the 2004 show, I overheard part of a nearby conversation between a dealer, Mrs. Arpin, in her booth and her customer.

I believe that I had heard the word Twiss and so went over to her when the customer left. It turned out she was talking about the subject clock, which she and her husband owned back home in Montreal. I mentioned The Canadian Clock Museum, expressed interest in the clock, and requested that they e-mail some pictures to the museum, which they did a few days later.

The museum's Conservator, Jordan Renaud, and I then drove to Montreal in late September 2004, the day after the NAWCC Ottawa Valley Chapter 111's meeting, to inspect the clock and take more pictures. Mr. and Mrs. Arpin had found the clock several years earlier in a local antique shop with its movement apart and in poor condition. They had paid a local Montreal clockmaker to repair many broken wooden teeth. Because the original hands and bells were missing, they had ordered replacements.
Jordan and I decided right there in their living room to purchase the clock for the museum, with delivery scheduled for mid-2005. Claude Arpin delivered the clock to the museum on June 30, 2005 (Figure 3).

**The Recorded Provenance of the Clock**

When Mr. and Mrs. Arpin found the clock at the antique shop, a note was included with it that was handwritten in French and probably dates to the early 1920s. The note records the name of the clockmaker plus an approximately 100-year record of the people who subsequently owned it. See Figure 4 for a scan of this valuable document; on the right side is Mr. Arpin’s English translation.

The maker is stated as Xavier Clément, a spinning wheel maker living north of Montreal, province of Lower Canada. The note says that Mr. Clément made the clock, apparently both the movement and the case, over a period of several years from 1820 to 1825. He had copied a clock owned by a Captain Moret in nearby Benoît that was perhaps a British brass movement clock. But this unusual 8-day, weight-driven, wooden movement has a third train offset far to the right side. That train’s purpose is discussed below.

The early owners of this clock are named in the note over a 100-year period to 1921. The notary Joseph Girouard had purchased the clock at an estate auction in 1908. His name is recorded in pencil on the back of the wooden dial. In the early 1920s Mr. Girouard was the member of Canada’s federal parliament who represented that area of the province of Quebec. At some point after the 1908 estate auction, restoration work was done by the curate at the monastery in Oka, Quebec.

In 2013, Ray Springer of the Ottawa Valley Chapter researched the various people recorded in the document. Incredibly, Ray was able to track down in Quebec the typed original French auction records from April 1908;
Figure 6. The rusted lock inside the front door (the included original key is not shown).

Figure 7. The X-shaped set of holes on the left side of the removable hood (also present on the right side).

Figure 8A. Pine case surface damage, base front.

Figure 8B. Case surface damage, hood front below the dial. There are no corresponding streaks on the horizontal ledge below it.

Figure 9. The painted wooden main and moon phases dials (after restoration by Canadian Conservation Institute staff). The replacement brass hands added by the previous owners were painted flat black at the museum.

Figure 10. The calendar subdial before restoration (left) and after restoration of the wooden surface and painting the hands (right).

Figure 11. The front of the moon phase dial after restoration by Canadian Conservation Institute Ottawa staff to remove some stains (as received, before installation).
The Canadian Clock Museum purchased a photocopy of them.

Mr. Girouard paid just $1.50 for the clock. For comparison, a few cents bought various dishes, but the horse-drawn sleighs and buffalo robes went for more than $20 each. The bidding reached $40 for a horse-drawn buggy, and $25 for a harmonium (bellows reed organ). See Figure 5 for the section of the sales record that includes the clock.

As Philip Morris states in his book *American Wooden Movement Tall Case Clocks 1712–1835*, “Unlike most wooden movement clocks found in Canada, this clock’s detailed provenance confirms it is entirely Canadian made and not an American import.”

### The Clock Case

The case is pine with what appears to be a mahogany surface graining under a darker finish. The style is Twiss-like, typical of 1820s tall case clocks, with scrolls at the top of the removable hood and a pillar at each side. The broken right-side scroll was reattached at some time in the past. The three wooden finials are old.

The overall case height is 90”, and the base width is 17¾”. The hood width is 19½”, the base depth is 8¾”, and the hood depth is 9¾”. We have the original key for the front door lock that is shown in Figure 6.

Because it has no door, the hood must be removed to access the winding arbors. There is an X-shaped set of holes on the right and left sides (Figure 7). Why are they there? Perhaps to let the sound out when the bells are struck on the quarter hours and the time is struck on the hour? Does the X shape represent the first letter of the first name of the spinning wheel maker, Xavier Clément? Or is this just a coincidence?

There are vertical subsurface marks on just some of the wooden panels on the front of the case (see, for example, Figures 8A and 8B). Examination of adjacent front panels indicates that the damage was not caused by contact with liquids. It seems likely that these damaged panels were cut from the same large pine board. I believe that this surface damage parallel to the wood-grain lines was probably caused by temperature and/or humidity fluctuations during the many decades of storage under less-than-ideal conditions.

### The Wooden Dials

The main dial is hand-painted on wood (Figure 9), probably pine or poplar, with three winding holes (discussed in “The Movement” section below). The painted rainbow design around the chapter ring and the moon phases dial is unusual. In addition to the minute and hour hands, there are two calendar hands and a seconds hand. All five hands are brass replacements obtained by the previous owners. We chose to paint them flat black for emphasis.

The two hands for the calendar (Figure 10) indicate the day of the week and the date in the month. The seven capital letters in pencil in the small chapter ring refer to the days of the week in French, indicated by the shorter hand (e.g., “M” for *mardi*, which is Tuesday). The date of the month is indicated by the longer hand; it is marked in pencil in multiples of six Arabic numbers from 5 to 25 plus 31. It is not known whether these various pencil markings are original to the dial when it was made. The winding-direction arrows were likely added later, perhaps a century ago after several broken teeth had to
Figure 15. Outside of the wooden front plate. Note the pinned ends of the four wooden posts seen in Figure 17.

Figure 16. Outside of the wooden backplate.

Figure 17. Inside of the wooden front plate.

Figure 18. Inside of the wooden backplate.

Figure 19. One square lignum vitae and four square bone bushings.

Figure 20. Close-up of one of the square lignum vitae bushings.
be repaired. Turning the key in the wrong direction could lead to broken teeth for the fragile wooden wheels that are now almost 200 years old.

The wooden moon phases dial (Figures 11 and 12) was probably originally connected to the movement, but the gear/pinion component was lost at some point in the past. A functional replacement could be made.

When the museum acquired the clock, there were some unidentified stains on the fronts of both dials. Note the area around the calendar in the left picture in Figure 10. We were fortunate to have the dials professionally cleaned and restored at no charge by staff at the Canadian Conservation Institute in Ottawa through a special program for Canadian museums. Janet Mason was the lead person who did the careful work in 2010.

The Three-Train Wooden Movement

Unlike the typical 30-hour Twiss movements, this is an 8-day movement. There are trains in the expected locations for the time and strike functions, but the third train is offset well to the right (Figure 9). It drives a variant of the *petite sonnerie* system, with one bell struck on the first quarter, two on the second, and three on the third. Only the large bell is struck on the hour. Thus, there are two wooden count wheels (Figures 13 and 14). Note the four replacement cast-metal bells purchased by the previous owners.

The provenance information (Figure 4) indicates that pear tree wood was used to make the wheels and other components. At that time, another fine-grained, fruit-tree wood—cherry—was used by American wooden movement makers. The wood used for the plates is unidentified, but it is not oak. The inside and outside surfaces for both plates are shown in Figures 15–18.
Examination of the plates shows square and round bushings made from three materials, including wood. Figures 19 and 20 provide two close-up views. The square lignum vitae bushings extend through the thickness of the plates, but the round wood (not shown) and square bone bushings are inset into the inner sides of both plates. Nothing is known about when or why the bushings were installed. However, because of the variety of materials used, it seems possible that the work was done at different times during the long life of the clock.

Photographs were taken for all of the separate wooden components in the movement when it was disassembled by museum staff for examination. A selection of seven of them is provided in Figures 21–27.

Figure 10 shows the calendar section of the main dial. Figure 28 shows the 7-tooth and 31-tooth wheels on the back of the front plate that control the hands that indicate the weekdays and month dates. Note the spring clip that holds these wheels on their wooden arbors and the two flat spring-metal strips, seen edge on, that lock the wheels in position. The calendar drive wheel above them rotates daily, with the two metal pins—their flush ends barely visible at the 7 o’clock position in the photo—engaging both calendar wheels.

Reassembly of the Movement

The movement was completely disassembled in November 2007. All components were laid out on a card
table and examined for condition (Figure 29). All of the pivots were polished. No broken teeth were found on the wooden wheels. The wheels and wooden arbors were treated with Howard’s Restor-A-Finish® to protect them.

With two count-wheel systems to deal with, it took four hands (the museum conservator’s and mine) to get the movement back together and fully functional in March 2008 (Figures 30–32). The weights were strung with 1 mm catgut.

**The Bob and the Three Weights**

The crude lead bob obtained with the clock is domed on the front side and flat on the back (Figures 33A and 33B). The overall length is 8⅞”, the diameter 2⅞”, and the thickness ⅝”.

The three weights are shown in Figures 34 and 35. The two “tin can” weights have wooden tops and bottoms and are filled with loose material (in the Twiss style but larger and much heavier). They drive the time and the strike trains. The smaller-diameter lead weight that fits inside the clock case on the right side (Figure 34) drives the quarter-hour, modified petite sonnerie train.

Figure 35 shows the three weights removed from the clock. The large weights are similar in size at 8⅜” high and 3½” in diameter. The dimensions of the lead weight are 7¼” high and 2¼” in diameter. All three each weigh a massive 12 pounds!

**Cog Counters Chapter 194**

Part of the pleasure of having an unusual clock comes from sharing it with other enthusiasts. I took this apparently Canadian-made movement and dial to the Cog Counters meeting at the Dwyer Park Pavilion in Preble, NY, in August 2007. Among the many collectors present who examined it was noted wooden movements’ expert Snowden Taylor (Figure 36).

**Conclusion**

This unusual clock that is almost two centuries old is probably a proverbial “one of a kind” and so is very rare in early Canadian horology. The movement, including the calendar, runs well for a week when the weights are wound up.

It was the opinion of the late Jim Connell, former colleague and Canadian clocks expert, that this is the first confirmed example of a clock whose wooden movement was made in Canada rather than imported from Connecticut. Jim kindly reviewed an early draft of this article, but unfortunately he passed away before the final draft was ready.

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**Figure 33A.** The domed front of the lead bob with wooden rating nut.

**Figure 33B.** The flat back of the lead bob.

**Figure 34.** The weights in position, seen through the open door with their wooden pulleys.
The Canadian Clock Museum is honored that author Philip Morris chose to include this clock in his 2011 book that is focused on early American wooden-movement tall case clocks from the early 1700s to the early 1800s. He states, “Clément’s clock ranks among the greatest achievements of wooden clockmaking.”

Sadly, we learned in the fall of 2005 that the clock’s previous owner Mr. Arpin had died suddenly a few weeks after he brought the clock to the museum. That is another part of the clock’s story, which includes not only when and how it was made but also the lives of those who crossed paths with it. This special clock has a rich story spanning from its original 1820s construction to its display in The Canadian Clock Museum.

Acknowledgments
The Canadian Clock Museum wishes to thank the Canadian Conservation Institute (CCI) in Ottawa for accepting the challenge of restoring the two clock dials, and especially CCI staff member Janet Mason for her expert work. The valuable knowledge and skill of Jordan Renaud, our museum Conservator, are much appreciated. Ottawa Valley Chapter member Ray Springer conducted the extensive genealogy search on clockmaker Xavier Clément and the other people documented in the French provenance note.

Notes and References
2. Varkaris and Connell, Early Canadian Timekeepers, 125.
3. Varkaris and Connell, Early Canadian Timekeepers, 73.

About the Author
Allan Symons is a long-time collector of Canadian-made and Canadian-label clocks and has been an NAWCC member since 1978. He became a Fellow in 2011. The Ottawa Valley Chapter is his “local,” where he regularly gives presentations. Based on his extensive research, to date he has published seven articles between 2010 and 2020 in the Watch & Clock Bulletin about 20th-century Canadian clockmakers and companies. Allan is the founder of The Canadian Clock Museum, which is located in Deep River, Ontario, and was built around his collecting passion that started more than 30 years ago. This unique museum, with its focus on Canadian clocks, opened to the public in May 2000 as his personal millennium retirement project following a long scientific career in chemistry research. Its collections include more than 3,000 examples dating from the early 1800s to the present time. The Quebec clock presented in this article is one of the highlights among the 400-plus clocks on display at the museum.