Watch & Clock BULLETIN

Journal of the National Association of Watch & Clock Collectors, Inc.

March/April 2023
Volume 65/2 • Number 462

National Association of WATCH & CLOCK Collectors, Inc.

National Office hours,
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We are committed to being the world leader, educator, and advocate for horology and for everyone who is interested in timepieces and horological issues.

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The *Watch & Clock Bulletin* (ISSN 2152-4858), peer-reviewed journal of the National Association of Watch & Clock Collectors, Inc., is published in January, March, May, July, September, and November. The NAWCC is a 501(c)(3) educational charitable nonprofit organization.

Manuscripts being offered for publication and all editorial correspondence should be emailed to the editor at the address above.

Periodicals postage paid at: Lancaster, PA 17604-9998 and additional offices.

POSTMASTER: Send address changes to the National Association of Watch & Clock Collectors, Inc., at the address above.

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NAWCC School of Horology

Museum: April 1 – November 30: Tues–Thurs, 10–5; Fri, 10–4; Sat, 10–5 • **December 1 – March 31**: Wed–Sat, 10–4
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Bus tours by appointment year-round

Letter from the Editor

This issue includes a special section: the 2022 award recipients. These individuals and Chapters provided exceptional service and accomplished noteworthy achievements on behalf of the NAWCC. The awards acknowledge the high level of commitment to the NAWCC shown by these members. This commitment was shown in many ways, from attaining excellence in horological research or providing outstanding support to having a longstanding commitment to the Association or providing critical leadership at regional and national events. Congratulations to each of you, and thank you for your efforts in promoting the field of horology and supporting the NAWCC.

Here's a reminder to watch your inbox for a ballot to vote in the 2023 NAWCC election. Seats are open on the Board of Directors and the Nominating and Elections Committee. The candidates' biographies are available in the January/February 2023 issue of the *Bulletin*. Be sure to confirm that your current email address is on file; updates should be sent to membership@nawcc.org. All ballots must be returned by 12:00 midnight EDT on April 1, 2023.

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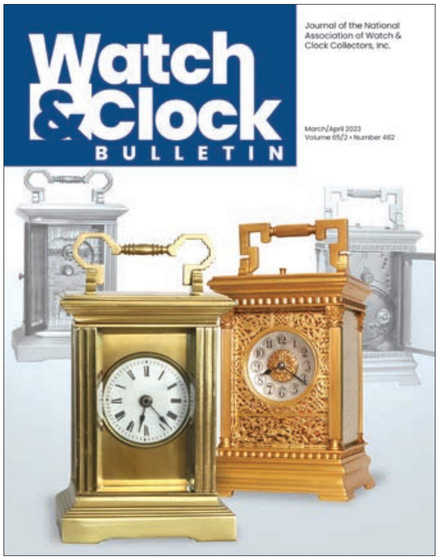
editor@nawcc.org



About the Front Cover

The front cover features two carriage clocks of note. On the right is a French carriage clock made by E. Maurice, circa 1885. It has a highly decorative case and an 8-day time, strike and repeat movement. Around the same time, the clock on the left, Harvard no. 551, was produced by the Harvard Clock Co., circa 1883, for American consumers who valued accurate timekeeping more than a fancy case. It has an empire-style case that was mass produced at a much lower cost than the French carriage clock. Probably fewer than 100 clocks of this style were produced. The movement is 8-day, time and strike, and this clock has a vertically mounted watch-type lever escapement. Learn more about American carriage clocks in Ken Hogwood's article on page 83. Front cover photos by Pete Schreiner.

The clocks on the front cover, plus many more, will be on display in the National Watch & Clock Museum's exhibit "Carriage Clocks from Around the World," sponsored by the International Carriage Clock Chapter 195. The exhibit will open at the Museum on July 13, 2023.

About the Back Cover

On page 120, Christopher Storb shares the story of Lancaster, PA, resident and clockmaker John George Hoff and his beautiful 8-day tall clock, shown on the back cover. Dated 1768, it is Hoff's earliest signed clock and has an elaborate case with a distinctive "Seed of Life" geometric design.

Message from the Board Chair

The year 2023 marks the 80th anniversary of the NAWCC as well as the first anniversary of the arrival of Executive Director Rory McEvoy to our headquarters and Museum in Columbia, PA. As Board Chair, I look forward to celebrating these milestones with our membership.

Prior to Rory's arrival, the Board of Directors had established an onboarding team who held regular meetings with Rory with the intent of accelerating his integration into the organization. I'm very pleased to say that this successful onboarding process, along with Rory's extensive background and skill set, provided the NAWCC with a year full of accomplishments.

These accomplishments include the renovation and relaunch of the School of Horology; reorganization of the Museum's collection storage areas; establishing permanent areas for conservation and object study; photography upgrades; improvements in our use of social media; and meaningful collaborations with other horological entities.

For 2023, work continues in all these areas. At the same time, Rory and his staff are working on updates and improvements to several of the museum galleries, new and exciting special exhibits, and many other changes. These projects are all made possible by your continued support. Come see the revitalized Museum, School, and Research Library for yourself at our 80th Anniversary Gala to be held as part of this year's National Convention. Details about the gala and Convention activities will be posted on natcon.nawcc.org.

We look forward to seeing everyone in Lancaster County, PA, this July!

Rhett Lucke
NAWCC Chairman of the Board
rlucke@nawcc.org

Message from the Executive Director

It's the time of year when clocks get their annual exposure to the media as we prepare to spring forward into Daylight Saving Time (DST). For our clocks and watches this is the best part of the annual cycle of human time intervention, as we do not contravene the makers' advice to never turn the hands backwards. From the modern perspective, this practice seems somewhat redundant since the old nine-to-five routine is increasingly a rarity. The first major exponent of seasonal adjustment of our clocks was a luxury home builder who was aggrieved to see that the workers lived by the clock and were sleeping through valuable sunlit hours in the summer.

His proposals were realized during World War I when clocks were shifted forward during the summer months as a fuel-saving measure. For the consumer, the financial benefits were short-lived: utility companies quickly raised their prices to compensate for their loss in revenue. There has been a consistent debate over this practice across the globe, with arguments for and against ranging from road safety to health concerns resulting from interference with the circadian rhythms of the human body. This circular argument is perhaps the stuff of the Mad Hatter and March Hare's table conversation in Lewis Carroll's *Alice's Adventures in Wonderland.*

Here at the NAWCC, we have had a positive start to the year. Thanks to Bob Burton's efforts as chair of the Chapter Relations Committee, staff from HQ and around 34 Chapter officers convened over Zoom for our first meeting to share thoughts and experiences and to reflect on what is working and what is not. For our first online gathering, I think it was a great success. The format was new to some, but the meeting ran without any hitches and there was productive conversation. We are focusing on the areas that can be supported by HQ and look forward to regular meetings to help enhance the NAWCC membership experience.

The digitization of the Hamilton photography collection continues. We are uncovering some fascinating images from across the range of activities within the Lancaster factory site. The most recent batch of scans relates to the microscopy of the crystalline structure of metals (Figure 1). Other photographs show a host of anonymous hands demonstrating a break circuit and other features of the Hamilton 21 marine chronometer (Figure 2). There are also images that show lesser-known reference systems and pricing, such as a chronograph wristwatch from the late 1960s (Figure 3).

You may have noticed that we have resurrected my predecessor's practice of providing more regular updates via email. Please watch for our monthly newsletter in your inbox. Along with the newsletter, we are publishing YouTube videos with greater frequency. So far we have looked at the unusual designs of Joseph Ives, the life and times of Hamilton's numbers 1 and 2, and more recently a spectacular 18th-century clock by White Matlack of New York. Along with these conversations are recordings of all the talks delivered at the 2022 Ward Francillon Time Symposium in New York.

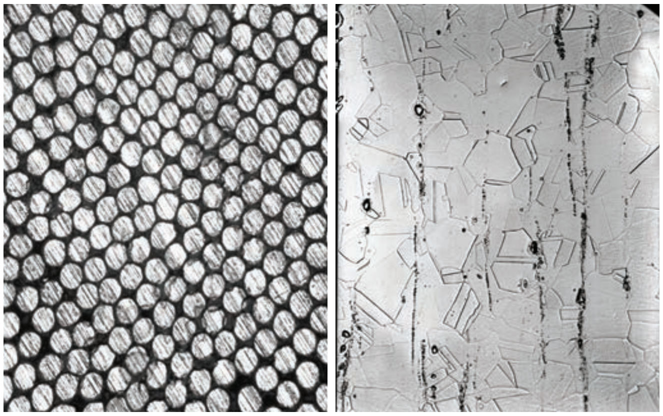


Figure 1. Hamilton's work in metallurgy and preparing the alloys of the balance springs and other components really put the company in a league of its own in the mid-1900s.

Work continues in the School, Library, and Museum ahead of the open house on July 13, the day before the National Convention opens its doors in Lancaster. The open house will be a great opportunity for you to see what goes on here and meet with staff and volunteers. I strongly suggest that you make your hotel arrangements now and take advantage of the great price at the Lancaster Marriott (visit natcon.nawcc.org, then select Hotel from the top menu). While you're in town for Convention, stay to enjoy the horological lectures and social time with friends at the Ward Francillon Time Symposium on July 16–17.

There are a few points to remember this month. First, don't delay—book your hotel and place at the Symposium while spaces are still available. Second, be careful when you turn your clock and watch hands forward. And third, do not follow the March Hare's practice of lubricating watches with butter and definitely avoid getting crumbs in the movement!

Rory McEvoy
NAWCC Executive Director
rmcevoy@nawcc.org

Figure 2. Hamilton 21 marine chronometer.

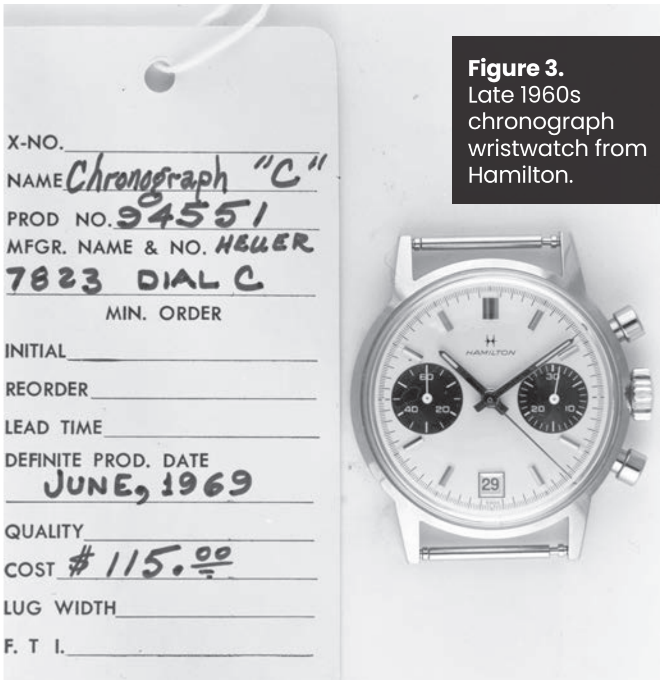


Figure 3. Late 1960s chronograph wristwatch from Hamilton.

NAWCC Members Are Coming To Lancaster!

For NAWCC's Most Exciting National Ever!

NAWCC's 2023 National Convention and 80th birthday celebration start Thursday, July 13. Members will gather at the Lancaster Convention Center – and a few miles away – at headquarters in Columbia, Pennsylvania.

- **Thursday Open House:** Talks, tours, and special sponsored exhibits. (Combine your Convention trip with a Museum trip!)
- **Friday:** Mart opens, first to "Early Birds." Later that day, to "Members Only."
- **Saturday afternoon:** For the first time in years, the Mart opens to the public.
- **Every day:** Educational talks, exhibit tours, and member workshops.
- **Sunday afternoon & Monday:** 2023 Ward Francillon Time Symposium. (Combine your Convention trip with a Symposium trip!)

More customers and more time mean more sales!

Book your deluxe room at the Marriott Lancaster – our host hotel – for the incredibly low rate of $119 per night, including parking. The Marriott connects directly with the Convention Center, and you can book online at natcon.nawcc.org . But don't wait! Availability is limited and rooms are filling up fast!

Register, select tables and book rooms online today!

80th National Convention • Lancaster, PA • 2023

July 13, 2023 - July 16, 2023

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2023 National Convention

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Mart & Host Hotel: Lancaster Marriott at Penn Square
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Registration

Early Registration Discount		**@ $70.00 per person**	______
After June 1st Registration		**@ $80.00 per person**	
Friday Early-Bird Mart Entrance		@ $50.00 per person	______
Saturday 80th Celebration Banquet		@ $55.00 per person	______
Old Timers & Fellows Luncheon		@ $35.00 per person	______

Special Access Needs or Dietary Restrictions?

Museum and School Open House

* Thursday, July 13th Starting at 10:00 am (Mart Load-in is on Friday)
* Demonstrations
* Tours & Talks
* Special exhibitions
* Food & Beverage Vendors

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Note: Table Holders wanting to be next to each other must submit their registrations together. All Table registrations include Early Bird admittance.

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** Donations are fully tax-deductible in the USA. To assign a donation to a particular purpose, contact membership@nawcc.org

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March | April 2023

Volume 65/2 • Number 462

Watch & Clock Bulletin

Columns

Library & Museum Connections

Bernard Goldstein aka Mr. Barny

BY RORY MCEVOY (PA)

In this issue we explore the NAWCC's extensive horological archive to find the story of a New York antique clock dealer whose larger-than-life personality comes through with great clarity in a three-box collection of letters and photographs.

The subject of this collection is Bernard Goldstein aka Mr. Barny, a clock dealer from New York City (Figure 1). Among the papers is a single photocopied sheet that announced Mr. Barny's relocation from 218 East 59th St. to new and smaller quarters at 1145 Second Avenue.

In this piece, the rules of the establishment are outlined:

- The customer is seldom right.
- No checks—cash only.
- All merchandise unconditionally guaranteed against return.
- Talk is cheap, but not at Mr. Barny's. He will talk to you about your old clocks for $100 per hour.

Further clarification is given as to how the customer may exit the shop, should he/she invoke Mr. Barny's ire (Figure 2).

The collection comprises more than 100 black and white photographs of clocks from the shop's inventory over the years, including industrial automata, European decorative clocks, pocket watches, fancy watch keys, tall clocks, and many different novelty pieces. One novelty item that caught our attention is an American alarm clock subjected to an alleged pressure of 90 tons by metal press (Figure 3). The clock with its crumpled dial is framed in an open-fronted wooden box, and a handwritten label on the case reads "And yet the clock runs."

From correspondence in the collection, we learn a little about Barny's personal and business life. His letters were frequently filled with irreverence and humor. A letter to his uncle in 1955 opens with an invitation to "sit a spell and have some cider and doughnuts while I tell you about an old friend of ours." The friend was Soloman C. Spring, a clockmaker who started his career working with

Figure 1. Mr. Barny, aka Bernard Goldstein, in his New York clock shop.

Burnham Terry and later was a partner at Welch Spring & Co. From the letter, we learn that among other things, Mr. Spring "was 5 foot 2 inches tall and just as wide."

The majority of the photographs feature a bottle of seven-year-old Kentucky bourbon to provide scale to the prospective clock buyer. Figure 4 shows a fine late-19th-century French ormolu mantel clock with a perpetual calendar and moon phase indication, which is fairly representative of the quality of the clocks in his collection. We found and scanned a large negative (Figure 5) that reproduces a proof photograph pinned to bulletin board. It appears that the half-size tall clock in the image was a little too large to use the bottle of bourbon for scale! Mr. Barny's character comes through loud and clear in this small collection, and it seems he was perhaps the first to wear a large clock around his neck (later adopted with panache in the 1980s by rapper Flavor Flav).

As yet, we have not found an obituary for Mr. Barny, but it appears that he followed the advice he shared: "Take it easy! You will never leave this world alive!" In a radio interview, Barny commented, "I like this card, it was given to me by my undertaker."

Do you remember visiting Mr. Barny's shop? Can you help us to complete the story? We'd love to hear from you. Send your stories to editor@nawcc.org.


AFTER 42 YEARS at 218 East 59th Street
Mr. BARNY is moving to NEW & smaller QUARTERS
at 1145 Second Avenue.
No longer will it be necessary to climb those broken-down stairs... the NEW STORE is at street level; also, the risk of being thrown down the stairs by an IRATE CLOCKMAKER has been eliminated [NOW, he will throw you in the gutter] ....
The Founder

Figure 2. Every cloud has a silver lining. The new premises offered the customer ease of both access and ejection!

Figure 3. This clock still runs! A sample of a novelty item in Mr. Barny's shop.

Figure 4. This bottle of Kentucky bourbon was used to show scale in many photographs. Being unopened in each one, it is an admirable sign of Mr. Barny's restraint.

Figure 5. This is either a half-size tall clock or an extraordinarily tall lady.

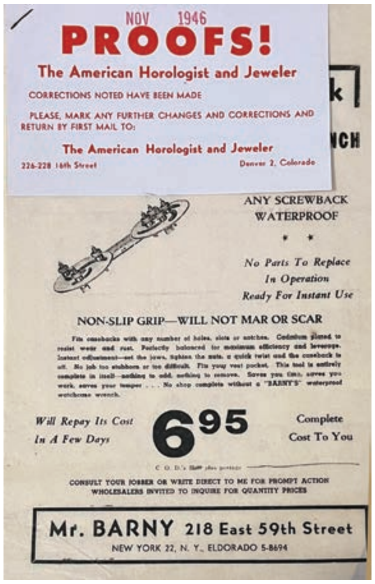
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Figure 6. In addition to clocks, Mr. Barny also retailed a small selection of shop tools, as seen in the pre-publication proof of his ad for a four-in-one watch case back opener.

National Watch & Clock

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Made in America: Carriage Clocks

BY KEN HOGWOOD, NAWCC FELLOW (FL)

INTRODUCTION

I was asked to give a lecture on American carriage clocks at the 2012 Ward Francillon Time Symposium. I began by researching the American clock companies that made carriage clocks for domestic and export sales between the 1880s and 1920s. My research led me to title my lecture "American Carriage Clocks: Trash or Treasure?"

My research showed American clockmakers were using the same manufacturing processes for carriage clocks that they used to flood the world marketplace with cheap pendulum mantel and wall clocks. These clocks were made with stamped sheet brass gears and used cheaply made escapements, meant to last for only 25 to 30 years. This method did not produce a quality carriage clock equal to the ones being produced by the French in the 1880s and 1890s. The French clockmakers made carriage clocks with high-quality materials crafted by true artists working in metals. They used heavy, hammered brass plates, heavy brass gears cut and polished to perfection, highly polished pinions made from high-quality steel, and platform escapements using jewels to reduce friction and wear. These carriage clocks were made to last 100 years or more.

I have a collection of these fine French carriage clocks, some almost 200 years old and still in good working order. Yes, some have been repaired or restored, but the basic clock is still intact!

To my surprise, I found one man and his company building clocks in America, particularly carriage clocks, that were made using similar manufacturing ideas and processes that had been practiced in France for more than 50 years. This piqued my interest to extensively research Joseph Henry Eastman and the companies he was involved with: the Harvard Clock Co. (1880–84) and the Boston Clock Co. (1884–94). The clocks produced by these companies were made to last a lifetime.

It would be impossible to discuss the best carriage clocks made in America without paying tribute to Joseph Henry Eastman (September 10, 1843–December 17, 1931). He lived his entire life in the greater Boston area. In the 1870 census he is listed as a watchmaker by trade and was probably trained by and worked for the E. Howard Co. of Boston, a company producing watches and clocks. But the early E. Howard Co. records, which could have proven Eastman's employment there, were lost in a fire. To learn more about the life of Eastman, refer to my article "Joseph Henry Eastman: The Watchmaker, the Clockmaker, the Man" in the November/December 2013 issue of the *Bulletin*.[1]

Figure 1. Harvard carriage clock, No. 551, ca. 1882, 11-jewel movement, 7"h x 3 ⅞"w x 3 ½"d. AUTHOR'S PHOTO.

The Harvard Clock Co.

November 20, 1880–May 19, 1884

In 1880, at the age of 37, Joseph Henry Eastman was one of four men who started the Harvard Clock Co. He was talented in designing high-quality clocks. Though trained as a watchmaker, no watches have been found signed by him.

Eastman was known to be a founder, partner, or employee of eight clock companies with nine different names. The most notable was the Boston Clock Co., which began as the Harvard Clock Co., chartered on November 20, 1880. It was located at 147 Columbus Ave., Chelsea, MA, which is now a part of Boston.

The Harvard Clock Co. made only about 800 clocks that bear the name "Harvard Clock Co." Probably fewer than 100 of the series no. 5 carriage clocks were made, and very few have survived. These carriage clocks were high-quality, 8-day movements, and all were time-only. They have three gold gilded plates, some have nickeled plates, and damascene-finished backplates that can be admired through a beveled glass back door. All known Harvard carriage clock movements have 11 jewels with a compensated fine watch escapement (Figures 1–4).

The carriage clocks' cases were made of heavy, solid brass, polished and gold plated. They have beveled glass on four sides and a porcelain dial. This construction sets these carriage clocks apart from the typical carriage clocks mass-produced in America by most of the other clock manufacturers at that time. Those manufacturers' main concern was to produce and sell carriage clocks cheaper than those being imported from France.

I specialize in carriage clocks but pictured here are some examples of other clock styles made by the Harvard Clock Co. The company also made marine clocks; banjo clocks; shelf clocks in marble, oakwood, and metal cases; and bank vault timing devices (Figures 5–8).

There is an online clock museum that catalogs all types of clocks made by the Harvard Clock Co. as well as American clock manufacturing companies during the 19th and 20th centuries. This online clock museum (www.chelseaclockmuseum.com) is owned and operated by NAWCC member James (Jim) Dyson, its founder and curator. The website has a wealth of information for anyone looking for research on any clock made by the above clock companies. Jim also invites you to visit the website and register any Harvard clock you may own.

Figure 2. Back view, Nos. 550 and 551, nickeled damascene backplate, glass back door. AUTHOR'S PHOTO.

Figure 3. Harvard carriage clock, No. 550, ca. 1882, full porcelain dial face, 7"h x 3 ⅞"w x 3 ½"d. PHOTO COURTESY JIM DYSON.

Figure 4. Harvard Queen Anne carriage clock, No. 590, ca. 1884, no bottom skirt, 6 ½"h x 3 ¾"w x 3 ¾"d. PHOTO COURTESY JIM DYSON.

The Boston Clock Co.

May 19, 1884–January 19, 1894

For unknown reasons, the Harvard Clock Co. changed its name to Boston Clock Co. on May 19, 1884, but the company remained at the same address. While the name changed, the commitment to producing high-quality carriage clocks, as well as other styles of clocks, remained the same.

The following words are from Boston Clock Co.'s only sales catalog, published by its New England agent:

> The clocks manufactured by this company have the best and finest movements ever made, and they are unequalled in workmanship and finish.
>
> All the movements are eight-day jeweled, and fitted with a fine watch escapement.
>
> They are SUPERIOR and RELIABLE TIMEKEEPERS. The clock will run correctly in any position. The most sensitive person will not be disturbed by the ticking, which is noiseless.
>
> The travelling clocks in fine gilt cases, are made in "time" also with half hour strike on Cathedral Bell, and are furnished with travelling cases.
>
> The Striking Movements are arranged for removing the springs without taking movement apart, and, by a simple device, the winding is done with the key placed on a single arbor for both the time and striking springs.[2]

The company also had licensed agents in other cities: Wm. H. Atwater in New York, G. S. Lovell & Co. in Philadelphia, and Smith & Patterson in Boston. These same agents probably were sales agents during the Harvard years as well. A hint of this fact is that the

Figure 5. Harvard shelf clock, No. 1186, ca. 1882, damascene backplate, 11 3/8"h x 7"w x 4 9/16"d; heavily influenced the Queen Anne carriage clock. AUTHOR'S PHOTO.

Figure 6. Harvard large shelf clock, Lattice, No. 1031, ca. 1882, large porcelain dial with window to view escapement. PHOTO COURTESY JIM DYSON.

Figure 7. Harvard marine clock, No. 1054, ca. 1882, 6 ¾" diameter, silvered dial with view window. PHOTO COURTESY JIM DYSON.

Figure 8. Harvard 8-day movement from marine clock, damascene nickeled plates, movement is the same as in the shelf clocks. PHOTO COURTESY JIM DYSON.

catalog's cover shows the words "Established 1880," the year Harvard was established (Figures 9A and 9B).

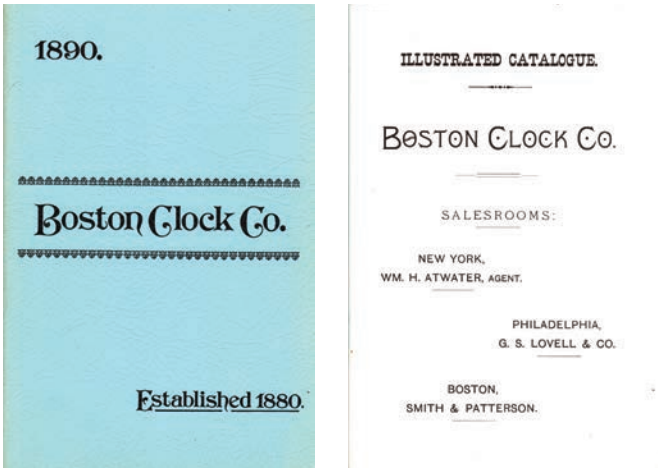
It is not known if the Philadelphia agent was responsible for the private-label sales to J. E. Caldwell & Co., a Philadelphia retail company established in 1858 that still exists today. The name J. E. Caldwell & Co. is imprinted on the dial of some Boston clocks.

Boston Clock Co.'s sales catalog, printed in 1890, offered only five carriage clocks and many other styles of clocks, including ship's bell clocks, crystal regulators, a locomotive clock, and mantel clocks (Figures 10–13).

Some of Boston's carriage clocks were sold in cases imported from France. The telltale signs are that these cases have an escapement-viewing window on the top, as was necessary in most French-made carriage clocks to see if the escapement was working. This is completely unnecessary on Harvard or Boston carriage clocks, as the escapement is mounted vertically on a subplate and can be viewed through the back door glass. Also, these French-made cases were assembled with pre-metric screws rather than American Standard screws.

The 1890 Boston catalog shows a Delos model with the top window. Also available was the American version with a different handle and no top window. This clock came with a choice of a dial with Roman numerals or Arabic numerals (Figures 14–18).

Another clock with a very high-quality French case is Serial No. 1337 (Figures 19–20). It is the same style of movement as the Boston Sparta (marked "J. E. Caldwell") but with the upgrade of damascene nickeled plates. This clock is not a marriage, as it is mounted in the case in a fashion found only on Boston carriage clocks. There are no extra holes in the case, and the face false plate is an exact fit to the movement. This is an early production movement, circa 1885, but strangely enough it is *not* marked Boston Clock Co. or Harvard Clock Co. It possibly was made as an experiment that would have been too costly to produce commercially due to its very expensive multipiece case. Cases very similar to this one were used by French clockmakers Drocourt and Oudin-Charpentier (Figure 21). Research shows that these French clocks were made in the same time period as Boston clock Serial No. 1337; the number is found on the clock's movement. Boston Clock Co.'s serial numbers were consecutive, which helps to give an approximate date for this clock.[3]



Figures 9A and 9B. The front cover and page 1 from the 1890 Boston Clock Co. catalog.

In the early years, 1884–93, some of the Boston carriage clocks were available with upgraded 11-jewel movements and nickeled damascene plates. However, the base price model had 7 jewels and gold gilded plates. All models had gold gilded cases. There were four time-only models and one time-strike model available in 1890. Boston Clock Co. was still using some French-made cases, as well as American-made cases.

There is a discrepancy in the price list furnished with the 1890 catalog (Figure 22). The catalog shows pictures and descriptions of models Athens and Delos, but the price list does not include them. The price list shows the following:

8 Day, Companion, time, No. 2	$20.00
8 Day, Companion, time, English style	$20.00

It is probable that these descriptions could be meant for the Delos with a French case, as it shows "No. 2", and Delos No. 3 could have been the American case. Possibly the one referred to as "8-day companion, time, English style" could have been meant for Athens?

The other Boston carriage clock, made with a time-only movement and featured in the 1890 catalog, was Athens, which probably was in production as early as 1888. I am not sure if it was available in more than one variation; the only Athens I own or have seen is the 7-jewel time-only 8-day movement pictured here (Figures 23–24).

The ever-popular Queen Anne, a very fancy case with at least four variations, was in production from the Harvard days until the end of production, probably late 1893. The early model has a solid back

Figure 10. Boston Sparta, No. 914, ca. 1885, dial marked with retailer name, "J. E. Caldwell", 6 ½"h x 3 ¾"w x 3 ¾"d. AUTHOR'S PHOTO.

Figure 11. Boston Sparta, back view, American case, beveled glass four sides, 7-jewel 8-day movement, case and movement gold gilded. AUTHOR'S PHOTO.

Figure 12. Boston Sparta, No. 2308, ca. 1887, gold mask with 2 ½" porcelain chapter ring, unusual numerals, 6 ½"h x 3 ¾"w x 3 ¾"d. AUTHOR'S PHOTO.

Figure 13. Boston Sparta, back view, American case with typical ribbed handle, 7-jewel 8-day movement. AUTHOR'S PHOTO.

Figure 14. Boston Delos, Style 3, No. 4062, ca. 1890–92, American case, gold mask dial, 2" porcelain chapter ring, Arabic numerals, beveled glass on four sides. AUTHOR'S PHOTO.

Figure 15. Back view, Style 2 and Style 3, movement has three gold gilded plates, 7-jewel movement, vertically mounted escapement, 6 ½"h x 3 ¼"w x 3 ¼"d. AUTHOR'S PHOTO.

Figure 16. Boston Delos, Style 2, No. 3982, ca. 1890–92, American case, full porcelain dial, Roman numerals, 6 ½"h x 3 ¼"w x 3 ¼"d. AUTHOR'S PHOTO.

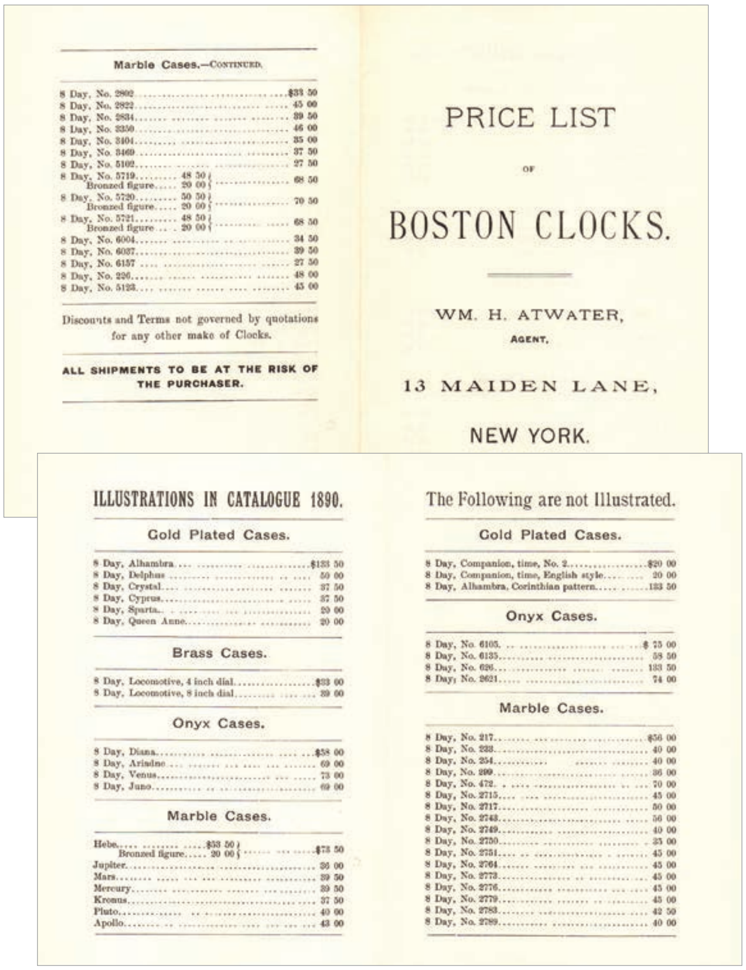
Figure 17. Boston Delos, Style 1, No. 2873, ca. 1885–90, French case, gold plated, beveled glass on top oval and four sides, gold dial mask. AUTHOR'S PHOTO.

Figure 18. Back view, Style 1, 8-day time-only, 7-jewel movement, same as Delos Styles 1 and 2, 6 ½"h x 3 ⅜"w x 2 ⅛"d. AUTHOR'S PHOTO.

Figure 19. Boston, No. 1337, ca. 1884–85, fancy French-made case, gold mask face, pierced gold insert on four sides, top and bottom, 1 ⅝" diameter porcelain chapter ring, gold rosette center, spade hands, Arabic numerals. AUTHOR'S PHOTO.

Figure 20. Boston (Fancy Case), back view, No. 1337, nickeled damascene plates, 11-jewel movement, compensated escapement, vertically mounted, bun feet, glass on four sides and top, 6 ⅝"h x 3 ⁵⁄₁₆"w x 3"d. AUTHOR'S PHOTO.

Figure 21. Oudin-Charpentier carriage clock, ca. 1870–80. AUTHOR'S PHOTO.



Marble Cases.—Continued.

8 Day, No. 2802	$33 50
8 Day, No. 2822	45 00
8 Day, No. 2834	39 50
8 Day, No. 3350	46 00
8 Day, No. 3404	35 00
8 Day, No. 3469	37 50
8 Day, No. 5102	27 50
8 Day, No. 5719 .... 48 50 / Bronzed figure 20 00	68 50
8 Day, No. 5720 .... 50 50 / Bronzed figure 20 00	70 50
8 Day, No. 5721 .... 48 50 / Bronzed figure 20 00	68 50
8 Day, No. 6004	34 50
8 Day, No. 6037	39 50
8 Day, No. 6157	27 50
8 Day, No. 226	48 00
8 Day, No. 5123	45 00

Discounts and Terms not governed by quotations for any other make of Clocks.

ALL SHIPMENTS TO BE AT THE RISK OF THE PURCHASER.

PRICE LIST

OF

BOSTON CLOCKS.

WM. H. ATWATER,

AGENT,

13 MAIDEN LANE,

NEW YORK.

ILLUSTRATIONS IN CATALOGUE 1890.

Gold Plated Cases.

8 Day, Alhambra	$133 50
8 Day, Delphus	50 00
8 Day, Crystal	37 50
8 Day, Cyprus	37 50
8 Day, Sparta	29 00
8 Day, Queen Anne	20 00

Brass Cases.

8 Day, Locomotive, 4 inch dial	$33 00
8 Day, Locomotive, 8 inch dial	39 00

Onyx Cases.

8 Day, Diana	$58 00
8 Day, Ariadne	69 00
8 Day, Venus	73 00
8 Day, Juno	69 00

Marble Cases.

Hebe .... $53 50 / Bronzed figure 20 00	$73 50
Jupiter	36 00
Mars	39 50
Mercury	39 50
Kronus	37 50
Pluto	40 00
Apollo	43 00

The Following are not Illustrated.

Gold Plated Cases.

8 Day, Companion, time, No. 2	$20 00
8 Day, Companion, time, English style	20 00
8 Day, Alhambra, Corinthian pattern	133 50

Onyx Cases.

8 Day, No. 6105	$ 75 00
8 Day, No. 6135	58 50
8 Day, No. 626	133 50
8 Day, No. 2621	74 00

Marble Cases.

8 Day, No. 217	$56 00
8 Day, No. 233	40 00
8 Day, No. 254	40 00
8 Day, No. 299	36 00
8 Day, No. 472	70 00
8 Day, No. 2715	45 00
8 Day, No. 2717	50 00
8 Day, No. 2743	56 00
8 Day, No. 2749	40 00
8 Day, No. 2750	35 00
8 Day, No. 2751	45 00
8 Day, No. 2764	45 00
8 Day, No. 2773	45 00
8 Day, No. 2776	45 00
8 Day, No. 2779	45 00
8 Day, No. 2783	42 50
8 Day, No. 2789	40 00

Figure 22. 1890 Boston Clock Co. price list.

Figure 23. Boston Athens, No. 3588, ca. 1890–93, porcelain dial, Arabic numerals, dial marked "Boston Clock Co.", decorated square columns, case gold-plated with beveled glass on three sides and back door, solid top. AUTHOR'S PHOTO.

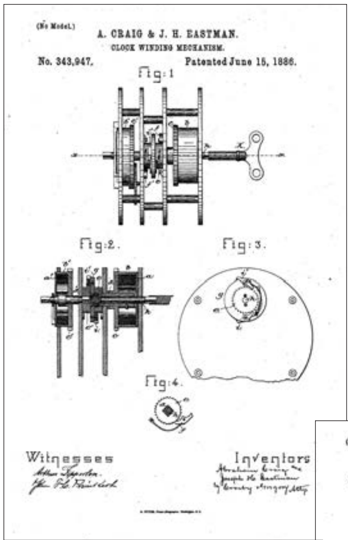
Figure 24. Athens back view, 8-day time-only movement same as all 7-jewel Boston models, 6 ½"h x 3 ¼"w x 3 ¼"d. AUTHOR'S PHOTO.

Figure 25. Early Boston Queen Anne, No. 983, ca. 1884–85, almost the same as Harvard model; American case, gold dial mask, Roman numerals, ribbed handle, beveled glass on three sides, solid back door, solid side chair trim, no base skirt. AUTHOR'S PHOTO.

Figure 26. Early Queen Anne back view, 8-day time-only movement same as all 7-jewel Boston models, 6 ⅛"h x 3 3⁄16"w x 2 ⅝"d. AUTHOR'S PHOTO.

Figure 27. Late Boston Queen Anne, No. 3397, ca. 1890–93, gold plated, gold dial mask, modern Arabic numerals, open side chair trim, skirted base, beveled glass on back door. AUTHOR'S PHOTO.

Figure 28. Late Queen Anne back view, same 7-jewel, 3-plate, 8-day movement as pictured in 1890 catalog, 6 ½"h x 3 ¼"w x 3 ¼"d. AUTHOR'S PHOTO.



◂ **Figure 29A.** Patent no. 343,947, dated June 15, 1886, clock-winding mechanism. This is the first tandem-wind movement patented in America. There are two other later tandem-wind patents in Europe.

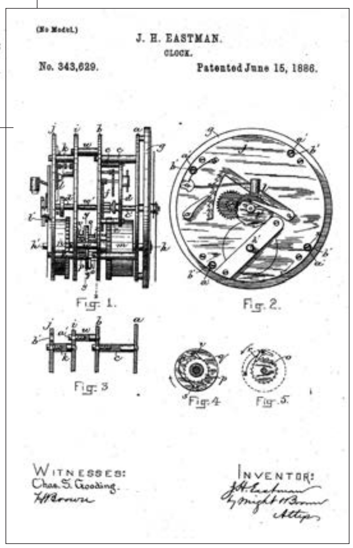


Figure 29B.▸ Patent no. 343,629, dated June 15, 1886, shows the part that allows separate let-down of the mainsprings. Note: Why is this patent number lower than the main movement?

door, making it necessary to open the door to see if it is working (Figures 25–28).

All Boston time-only models sold for $20.00 each, or today's equivalent of $661.58. The Cypress model was the most expensive carriage clock, offered in the 1890 catalog for $37.50. While this sounds cheap, it was not. In today's dollars, that would be a whopping $1,240.50. Inflation has taken its toll over the past 132 years. Or you could say in old folks' terms, "A dollar ain't what it used to be."

The Cypress model was not made for the ordinary worker. It was somewhat of a status symbol to own one of these carriage clocks or one of the other mantel clocks made by the Boston Clock Co. These clocks ran for eight days, unlike most American pocket watches, which had to be wound every day. Some of the more expensive clocks struck the time on a cathedral gong.

Boston carriage clocks were more expensive than many other American-made carriage clocks of the time but, as always, you got what you paid for. Most carriage clocks made by other American clock companies were cheaply made and cheaply priced. Many of these were exported to Europe and influenced French clockmakers to cheapen their clocks' quality to be competitive with American-made clocks in the late 1890s and beyond. I will save that story for another time.

The Tandem-Wind Clocks

Many of the carriage clocks imported from France and England had the very useful feature of striking on a spiral gong to signal the hour and half-hour. Some would repeat the strike by pressing a button on the clock. These carriage clocks are referred to as repeaters. This was an important feature before electric lighting was widely available, as the owner could hear the time, eliminating the need to light a candle or oil lamp at night. This feature made European—mostly French-made—clocks very desirable to those who could afford them. I'm sure this is the main reason Joseph Eastman felt the need to invent a striking model clock in an effort to compete for this segment of the market.

On June 15, 1886, Abraham Craig[4] and Joseph Eastman, co-founder and general manager of Boston Clock Co., were granted patent no. 343,947 for a striking movement (Figure 29A). This movement has round plates, indicating that the main use was for mantel clocks, the greatest sellers for the Boston Clock Co. The company never used the term *tandem wind*; instead, it only referred to an 8-day striking movement.

Another patent—no. 343,629 (Figure 29B)—shows how the plates are assembled to let down the mainsprings in tandem-wind clocks. The Cypress model is Boston Clock Co.'s only carriage clock with the tandem-wind movement. This movement is wound from the back of the clock rather than the face of the clock, as was required in the mantel clocks and ship's bell clocks. This movement allows time-and-strike spring barrels to be wound with a single winding square. It has an hour/half-hour strike on a gong. Because of its unique movement, the Cypress was given a separate set of serial numbers. About 600 of this model were produced.

The Cyprus model came in at least four different case styles. Some cases were made in the United States, had no top window, and had a ribbed handle that was the same as other Boston carriage clocks (Figure 30). Others had a case imported from France with a top window, metric screws, and an octagon sectional handle similar to those found on many French-production carriage clocks (Figure 31). Some movements also had a damascened backplate, while other Cyprus models had a sculpted backplate (Figure 32). The Cyprus case is taller, wider, and deeper than any of the time-only model carriage clocks made by Boston, thus accommodating the much larger tandem-wind movement.

The tandem-wind movement was also used in crystal regulators (Figures 33–34), ship's bell clocks, and some other wall and mantel clocks, which were wound from the front, unlike the Cyprus model. The Alhambra (Figure 35) was Boston's most expensive model: $133.50 in the 1890 catalog ($4,368.12 in today's dollars).

The tandem-wind time-and-strike clocks boosted sales. About 14,000 clocks were made and sold over the next few years. But it was not enough to save the Boston Clock Co.; its assets were sold to the Ansonia Clock Co. on January 19, 1894.

Eastman Clock Co.

March 13, 1894–October 29, 1896

The Eastman Clock Co. was first located at 64 Warren Ave., Roxbury, MA. The company then moved to a new brick building located at 284 Everett Ave., Chelsea, MA. The company was deep in debt as early as April 1, 1896, with final bankruptcy occurring on October 29, 1896. The Eastman Clock Co. operated for approximately two years and eight months between the two locations, producing an unknown number of marine clocks, banjo clocks, and weight-driven wall regulators. Sadly, no carriage clocks have been found that can be attributed to this company.

The Jewelers' Circular and Horological Review, a Boston publication that kept the New England clock and watch manufacturers and retailers informed of the happenings in their industry, reported the following information on August 1, 1894:

> THE EASTMAN CLOCK CO. OBTAIN A FLATTERING CONTRACT
> Boston, Mass., July 25 – The Treasury Department has recently awarded the contract for supplying the United States buildings east of the Rocky Mountains, with clocks, to the Eastman Clock Co. of this city. The contract expires June 30, 1895.

I assume this would be US Post Offices and all US government buildings. This would have been a large quantity of clocks pre-sold to the government.

On September 10, 1894, *The Jewelers' Circular* gave the following report:

> THE EASTMAN CLOCK CO. TO HAVE A LARGE PLANT IN MELROSE, MASS.

Figure 30. Boston Cyprus, No. 288, ca. 1887–90, American case – no top window, gold plated, full porcelain dial, Roman numerals, flat top, ribbed handle, beveled glass on three sides and back door, 7″h x 3 ¾″w x 3 ½″d. AUTHOR'S PHOTO.

Figure 31. Early Boston Cyprus, No. D-170, ca. 1886, French case, gold plated, full porcelain dial, Arabic numerals, French handle, beveled glass on four sides and oval top glass, 7 ⅛″h x 3 ⅝″w x 3 ¼″d. AUTHOR'S PHOTO.

Figure 32. Cyprus back view, sculpted backplate, all plates are gold gilded, 8-day movement, time and strike on a gong that is mounted on the backplate, 7 jewels, compensated escapement, single winding square. AUTHOR'S PHOTO.

Figure 33. Boston Regulator Crystal, No. 12912, ca. 1890-93, large, gold-plated shelf clock, beveled glass sides and doors, 4″ diameter dial, pale yellow with white cartouches and black fancy Arabic numerals. AUTHOR'S PHOTO.

Figure 34. Boston Crystal, back view, gong holder mounted on a pedestal, tandem-wind movement mounted from the top and wound from the front, 8-day, 7-jewel, 9 ¼″h x 6 ½″w x 5″d. AUTHOR'S PHOTO.

> Melrose, Mass., Sept. 10 – The concern known as the Eastman Clock Co., whose works are now located at Roxbury, is about to remove to this place, citizens of Melrose having subscribed $13,000 for stock to increase the output of the plant. The capital is now $25,000. The factory will be erected on Swains Pond Ave.

There is no evidence that this factory was ever built. What happened? This contract could have saved the company. I have never seen a clock made by Eastman Clock Co. that was marked "U.S. Government property", which I'm sure it would have been if purchased and used in a post office. If anyone knows of such a clock, I would like to hear about it.

The contract would have expired on June 30, 1895, which was before the start of the 284 Everett Ave. factory in Chelsea, MA.

(The New or 2nd) Boston Clock Co.

October 30, 1896–August 4, 1897

Harry W. Bates and investors chartered a company in Kittery, ME, on October 7, 1896, but could not occupy Eastman's 284 Everett Ave. building in Chelsea, MA, the building previously purchased from the bank, until Eastman Clock Co.'s bankruptcy was finalized on October 30, 1896. It was reported in *The Jewelers' Circular* that there was no production until November 11, 1896.

Bates was not a clockmaker, just a businessman. Assuming the company could hire workers to run the production, this company possibly operated seven months. There is some proof that production started in November 1896.[5] It is known there were some clocks finished in these few working days before all assets and the building were acquired by Charles Pearson on August 4, 1897, reportedly to settle a debt owed by H. W. Bates. The new name of the company owned by Pearson was Chelsea Clock Co. Joseph Henry Eastman never worked for the second Boston Clock Co. nor had any connection to it besides having built the building that housed the company.

Chelsea Clock Co.

August 4, 1897–Present

The Chelsea Clock Co. took over operations in the factory at 284 Everett Ave., Chelsea, MA. In the first few months of Chelsea's operation, some of the

Figure 35. Boston Alhambra, ca. 1890–93, gold-plated case, tandem-wind, 11-jewel, 8-day movement, nickeled damascene plates, 13 ½"h x 13 ½" base. PHOTO COURTESY OF JIM DYSON.

Figure 36. Chelsea (new Boston), No. 2854, ca. 1897, American case, full ivory-like dial, spade hands, polished brass, lacquered finish, beveled glass on four sides. AUTHOR'S PHOTO.

Figure 37. Chelsea (new Boston), rebranded back view, shows original name circular-milled off, 8-day, 7-jewel movement same as most movements from original Boston Clock Co., 6"h x 3"w x 2 ⅝"d. AUTHOR'S PHOTO.

clocks that had been made by the (newer) Boston Clock Co. were finished, but the name Boston Clock Co. was milled off and rebranded as Chelsea Clock Co. These clocks are almost identical to the Delos model made by the original Boston Clock Co., which ended production in late 1893.

Chelsea's carriage clocks started with Serial No. 2799, and this first carriage clock was reportedly kept in Charles Pearson's office for many years. The fate of this carriage clock is not known. Possibly it was lost in the fire at the company several years later. I do have one of the rebranded carriage clocks, No. 2854 (Figures 36–37). It is unknown how many of these carriage clocks were completed and rebranded, but the quantity is no fewer than 55 as proved by the serial number count.

A new series of carriage clocks with the model number 188-D, starting with No. 3000, was put into production. An example of this model, No. 3005, is shown in Figures 38–39. This model is pictured in Chelsea's first catalog.

Fair Haven Manufacturing Co.

December 1896–February 1898

Eastman did not give up on his desire to manufacture high-quality clocks. At the age of 53, his next venture was to partner with Nahum J. Busby, general manager of the Busby Bell & Tool Co. of Fair Haven, VT, to form the Fair Haven Manufacturing Co.[6]

Figure 38. Chelsea model 188-D, No. 3005, ca. 1899–1906, new style is shorter, gold mask, large porcelain chapter ring with blue Arabic numerals and Breguet hands, beveled glass on four sides. AUTHOR'S PHOTO.

Figure 39. Chelsea 188-D, back view, 8-day movement is same design as Boston Clock Co., plates are wider to fit new style case, 5 ½"h x 3 ⅞"w x 2 ⅜"d. AUTHOR'S PHOTO.

Prior to the formation of the Fair Haven Manufacturing Co., Busby demanded that Busby Bell & Tool Co. pay him $50,000 for the machinery and tooling he brought from Boston. The board of directors refused and voted to remove him as general manager of Busy Bell & Tool Co. Busby left Fair Haven, VT, with the statement, "I will see you in court," and returned to Boston.

Busby filed a lawsuit for $50,000. During this period, the *Vermont Record*, a Fair Haven, VT, newspaper, published a running account of a court battle for control of the Busby Bell & Tool Co. between Nahum J. Busby, N. R. Reed, and other officers of the company. This lawsuit was reported in the *New York Herald* on Friday, January 1, 1897. No court ruling on this lawsuit has been found, so we can assume it was settled out of court.

The documents recorded in Montpelier, Vermont's state capital, show that the official name change from the Busby Bell & Tool Co. to the Vermont Clock Co. occurred on February 15, 1898. The name change was by vote of the current board of directors of the Busby Bell & Tool Co. The list of board members did not include the names of Nahum J. Busby or Joseph H. Eastman.

There was no mention of the interim-named company, Fair Haven Manufacturing Co. Therefore, we must assume that Fair Haven Manufacturing Co., while it did exist, was never incorporated in the State of Vermont. The company did produce at least two models of carriage clocks (Figures 40–43), along with some other styles of clocks. Its total production is not known.

Fair Haven Manufacturing Co./ Vermont Clock Co.

February 1898–May 1901

After Busby Bell & Tool Co. changed its name to Vermont Clock Co., Eastman continued as the production manager. In 1900, the company published its only catalog (Figure 44), which shows two time-only carriage clocks. The catalog also shows three crystal regulators. One appears to be a tandem wind, time and strike. The other two are time and strike with two spring barrels wound separately (Figures 45–48).

The catalog did not offer a striking two-barrel carriage clock like the one pictured in Figures 47 and 48. This clock was made sometime after the catalog was printed and is very rare. I'm aware of only three in existence today: I own one and I have seen only two others. The catalog offers several other styles, including a ship's bell clock (Figures 49–50) and a marine clock (Figures 51–52).

Vermont Clock Co./Kilbourne Manufacturing Co.

May 1901–1902

The Vermont Clock Co.'s name and assets were sold to Kilbourne Manufacturing Co., headed by Charles Kilbourne, on May 18, 1901. Kilbourne Manufacturing Co. had previously been a wire manufacturing company. After the sale to Kilbourne, clocks were marked with the names Vermont Clock Co. or Kilbourne Manufacturing Co. (Figures 53–56). Under all three names—Fair Haven Clock Co., Vermont Clock Co., and Kilbourne Mfg. Co.—the companies were moderately successful and produced approximately 3,000 clocks between 1898 and 1902. The final version of the company, Kilbourne Manufacturing Co., ceased all manufacturing of clocks in 1902.

All three companies operated in the same building in Fair Haven, VT. Even after Charles Kilbourne purchased the assets of Vermont Clock Co., he continued to use the name Vermont Clock Co. as well as the name Kilbourne Manufacturing Co.

Apparently, Joseph Eastman was still involved in the company after Charles Kilbourne took over the Vermont Clock Co. A good testament of this is the fact that the Eastman-patented tandem-wind movement was still being used in some of the Vermont clocks.

The clocks marked "McMillan Patent" most likely used the improved movement patented by George D. McMillan in January 1901. This patent, no. 664,866, offered an improvement to Eastman's tandem-wind movement. It enabled silent strikes, creating a true ship's bell clock, which allowed for the changing of the watch. The movement in the Vermont carriage clock (Figure 56) allows for a simple time-striking of the hour and half-hour. It is likely that McMillan designed the side-by-side spring barrel movement in that carriage clock movement; however, there are no markings on the movement to prove this fact.

The three companies ceased operations in 1902, and Herschede Clock Co. purchased the assets and unfinished clocks from Charles Kilbourne. The building was leased to other tenants in 1903.

It is speculated that Joseph Eastman continued working for Herschede Clock Co. as an independent contractor, completing clocks and movements.[7] Clocks have appeared for sale by Herschede that are marked "Vermont Clock Company" as late as 1907.

It is possible that some clock movements used in Eastman's next company, the Little & Eastman Clock Co. (1904–8), were purchased from the defunct Vermont Clock Co. and Kilbourne Manufacturing Co. prior to Herschede's acquisition.

Figure 40. Fair Haven Mfg. Co., Style 1, no serial number, ca. 1897, American case, gold-plated, ivory-like porcelain dial similar to Boston Delos, beveled glass on four sides. AUTHOR'S PHOTO.

Figure 41. Fair Haven, Style 1, back view, 8-day time-only, 7-jewel movement with nickeled damascene backplate, 6"h x 3"w x 2 ¾"d. AUTHOR'S PHOTO.

Figure 42. Fair Haven Manufacturing, Style 2, no serial number, ca. 1897, American case is same as Style 1 except dial is white porcelain with Arabic numerals. AUTHOR'S PHOTO.

Figure 43. Fair Haven, Style 2, back view, all plates are nickeled, movement is the same as Style 1 except the damascene pattern is different. AUTHOR'S PHOTO.

Vermont Clock Co. and Kilbourne Manufacturing Co. were the last companies associated with Joseph Eastman that manufactured a carriage clock. However, Eastman continued to found or partner in four more clock companies, none of which manufactured a carriage clock:

Little & Eastman Clock Co. (1904–1908)

Derry Manufacturing Co. (1908–1910)

Second Eastman Clock Co., Inc. (1915–1918)

E & O Clock Co. (1920–1921)

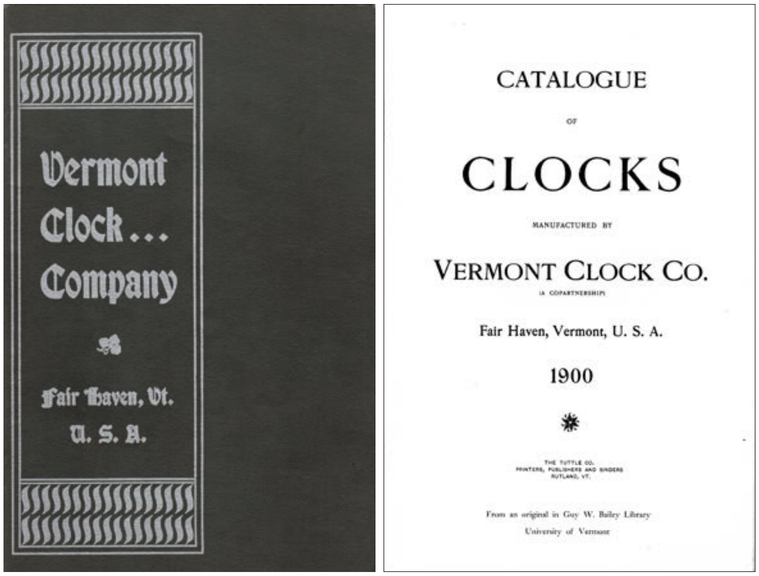


Figure 44. Cover and page 1 of the Vermont Clock Co. catalog, 1900.

Conclusion

Since the early 1800s, hundreds of clock and watch manufacturing companies in the United States have come and gone. Only three companies have survived: Chelsea Clock Co., Waterbury Clock Co. (now Timex), and Seth Thomas Clock Co.

Chelsea Clock Co., located in Chelsea, MA, is the only clock company still manufacturing a limited number of complete clocks with American movements. Most of its clocks have movements made in Germany.

Waterbury Clock Co. evolved and remade itself into the largest watch company in the world, Timex. The company is still headquartered in Connecticut but its watch manufacturing has moved overseas.

Seth Thomas Clock Co. is a very old name in American clocks, but there are no Seth Thomas clocks made in America.

There is some good news. Wristwatches are having a resurgence in popularity. There are several small factories in the United States making solar, self-winding, and other multifunction wristwatches.

Figure 45. Vermont model 2, no serial number, ca. 1900–1, case gold plated on brass, beveled glass on four sides, gilded gold mask with 2 ¼" porcelain dial ring similar to Boston Delos. AUTHOR'S PHOTO.

Figure 46. Vermont model 2, back view, 8-day time-only, 7-jewel movement with compensated escapement, 6"h x 3"w x 2 ¾"d. AUTHOR'S PHOTO.

Figure 47. Vermont, large carriage clock, no serial number, ca. 1901–2, case gold plated, beveled glass on four sides, top engraved "Feby – 10-23-1903", porcelain dial, Arabic numerals, unusual handle. AUTHOR'S PHOTO.

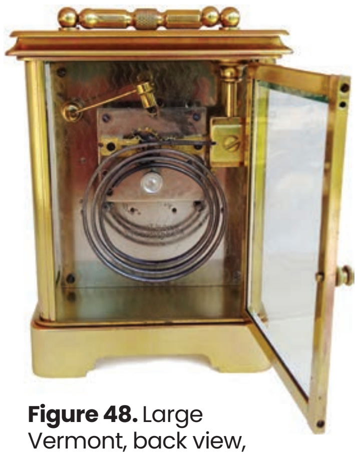


Figure 48. Large Vermont, back view, 8-day movement, time and strike on a gong, two winding squares, three nickeled plates, compensated escapement marked "Vermont Clock Co.", 7 ⅛"h x 4 ⅜"w x 3 ½"d. AUTHOR'S PHOTO.

So maybe the art of watchmaking is not dead in America.

While carriage clocks are no longer made in America, they were popular for more than 125 years and do have a place in timekeeping history. Some are now valuable and rare antiques because of their quality and beauty. Carriage clocks made by Harvard Clock Co., Boston Clock Co., Chelsea Clock Co., Fair Haven Manufacturing Co., and Vermont Clock Co. are timepieces to be collected and respected for their beauty and quality. They are some of the best carriage clocks made in America.

Acknowledgments

Thanks are due to Beauton, my wife, for the many hours and computer graphics required to make this article possible; Jim Dyson, Chelsea Clock Museum curator and researcher, for his information and photos; Danielle Roberts, volunteer with the Fair Haven Historical Society; and Roger Conner (deceased), a collector, researcher, and restorer.

Figure 49. ▲ Vermont 5″ ship's bell clock, ca. 1901, two winding squares, silvered dial, Breguet hands. PHOTO COURTESY JIM DYSON.

Figure 50. ▸ Vermont movement for 5″ ship's bell clock. PHOTO COURTESY JIM DYSON.

Figure 51. Vermont 5″ marine clock movement, damascene backplate, three nickeled plates. PHOTO COURTESY JIM DYSON.

Figure 52. Vermont 5″ marine clock, ca. 1900, silvered dial, polished brass case. PHOTO COURTESY JIM DYSON.

Notes and References

1. Ken Hogwood, "Joseph Henry Eastman: The Watchmaker, the Clockmaker, the Man," *Watch & Clock Bulletin* 55, no. 406 (November/ December 2013): 602–11.
2. Boston Clock Co., sales catalog (Boston: Smith & Patterson, 1890).
3. Research assistance came from several sources: Danielle Roberts, Fair Haven (VT) Historical Society; Jim Dyson, curator and researcher at the Chelsea Clock Museum; Roger Conner, collector, research and restorer (now deceased); *Boston City Directories* published during the time frame of these clocks; US Census reports; issues of *The Record* (Fair Haven, VT, newspaper); articles from Boston and Chelsea contemporary newspapers; various issues of *The Jewelers' Circular and Horological Review*.
4. Abraham Craig was a founding partner of Harvard Clock Co. in 1880 and an engineer by trade, which might be why Eastman chose him to partner with.
5. Several carriage clocks are known to have the original company name circular-milled off and re-marked "Chelsea". Figures 36 and 37 show a rebranded clock that I own. Chelsea's first clocks starting with No. 2799 were almost identical to the original Boston Clock Co. Their newly designed carriage clocks started with No. 3000.
6. This merger was reported in *The Jewelers' Circular and Horological Review* (December 16, 1896). It would have been impossible for Eastman to be involved with Chelsea, as Pearson did not take control of the second Boston Clock Co. until August 4, 1897, and he then renamed it Chelsea Clock Co.

Figure 53. Vermont Clock Co. 5" ship's bell clock, ca. 1901, dial marked "McMillan Patent", probably Eastman tandem-wind movement with McMillan-patented improvement. PHOTO COURTESY JIM DYSON.

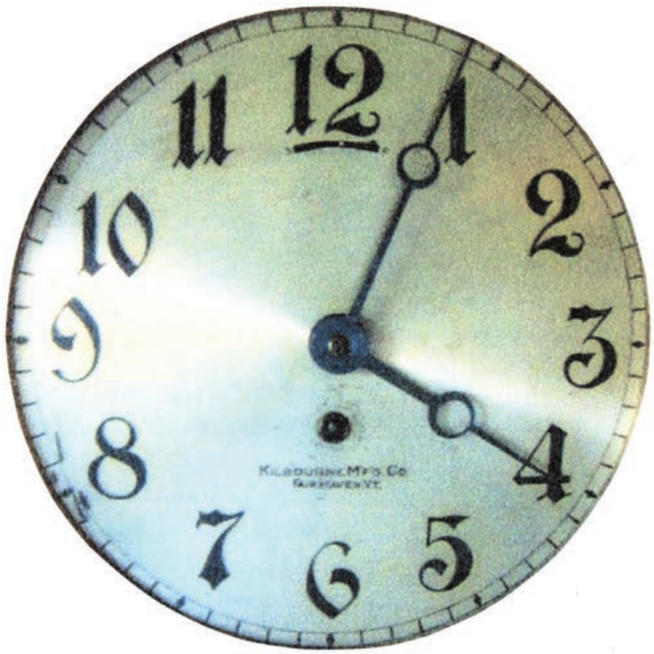


Figure 54. Dial for 5" ship's bell clock, marked "Kilbourne Mfg. Co.", ca. 1901, probably Eastman tandem-wind movement. PHOTO COURTESY ROGER CONNER.

7. Reasonable conclusions may be made from speculations. Eastman probably finished clocks from parts purchased from Kilbourne Manufacturing Co. by Herschede in 1902 through 1903. He started a new company in 1904 known as Little & Eastman Clock Co., which operated from 1904 to 1908. Eastman would have received an income from somewhere in the approximately two years after Kilbourne closed in 1902. Who would have been better for a job at Herschede?

Figure 55. Kilbourne Manufacturing Co. 5" ship's bell clock, ca. 1901, time and strike, dial marked "McMillan Patent", two side-by-side spring barrels. PHOTO COURTESY ROGER CONNER.

About the Author

Ken Hogwood is a retired businessman living in Port Orange, FL. He has been a member of the NAWCC since 1999. Ken is a collector, researcher, and restorer of antique carriage clocks. He also enjoys presenting PowerPoint programs, which he creates from his travels and research projects, at local Chapter meetings and Regionals. He is a founding member of the International Carriage Clock Chapter 195 and currently is vice president. He also is a member of Florida Suntime Chapter 19, Jean Ribault Chapter 68, and British Horology Chapter 159. Ken has been involved in many Regionals in Florida and Tennessee, serving as exhibit chairman and/or program chairman.

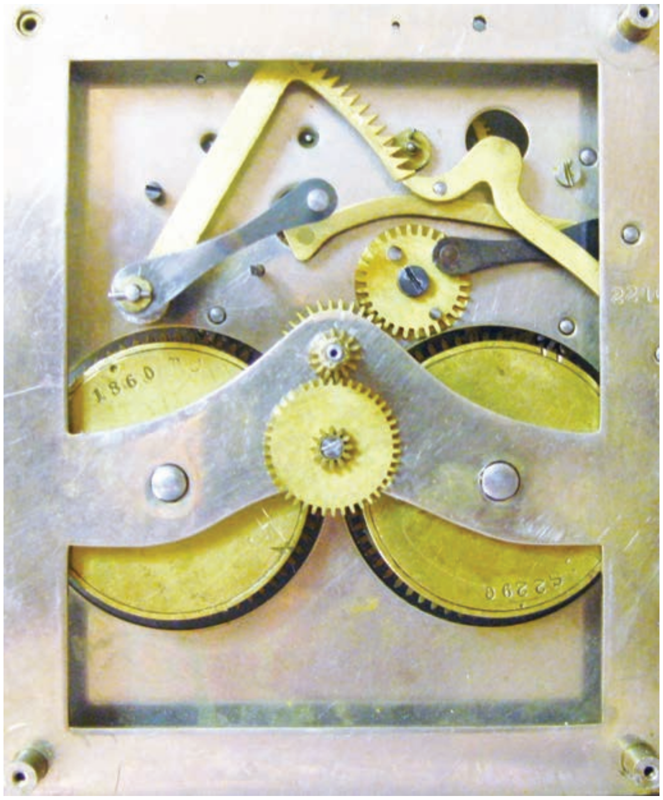


Figure 56. Vermont Clock Co. carriage clock movement, ca. 1901, time and strike, probably McMillan-patented movement, two side-by-side spring barrels. AUTHOR'S PHOTO.

Carriage clocks will be on display in the National Watch & Clock Museum's exhibit "Carriage Clocks from Around the World," sponsored by International Carriage Clock Chapter 195. The exhibit will open at the Museum on July 13, 2023.

The Atlantic Clock Works of Birmingham, England, Revealed

Part 2: "First Attempt" & "Early Production" Movements

BY PETER GOSNELL (UK)

Introduction

After prolonged searching, just one family of clocks has been found that matches, in all but one detail, the 22 key points (previously listed in Part 1[1] and reprinted here on page 108) that describe clock production at C. & H. Cartwright's Atlantic Clock Works, Birmingham, England, from 1867 to 1880. These apparent Cartwright movements are all spring-driven (reported in point 5), have brass plates and wheels with punched-out apertures formed with a press (reported in points 9 and 10), have arbors made from steel wire with driven-on collets (reported in point 12), and have lantern pinions (reported in point 13).

As will be seen in Part 3 of this article, the production of cases at the Atlantic Clock Works now appears to have started later, sometime after 1870, when "Square Nut" movements were being manufactured. What appear to be Cartwright cases have bodies made from pine with various veneers applied (reported in point 15); were wall clocks that could have been made for shops, offices, and dining rooms; had large dials (including drop dials) with marquetry or inlay; and had Vienna regulator-styled cases with a mirror-backed pendulum box and imitation mercury pendulum (reported in point 17).

As will be seen in Part 6, this family of clocks also includes one-day duration wood-cased cottage or kitchen clocks (reported as being "in hand" in point 22). As previously stated in Part 1, the only rather troubling additional piece of information given in point 5 was that finished mainsprings "are then ready for placing in the barrel of the clock": these supposed Cartwright clocks do not have springs in barrels. One possible interpretation of the original text quoted above could be that the reporter may never have witnessed springs being put into barrels on his visit to the factory and merely assumed that they would be treated as all contemporary, English-made clock movements were (mainsprings contained within barrels), which he would have been far more familiar with.

First Attempt at Movement Manufacture

Figures 1A and 1B show a movement that the author now believes could be C. & H. Cartwright's first attempt at industrialized clock production, which we are told "was started in 1867" (point 1). This "First Attempt" ("F.A.") movement, which has no previously known maker, is a spring-driven striking movement of 8-day duration and conforms exactly to the relevant key points (5, 9, 10, 12, 13) detailed and analyzed above. Five "F.A." movements have been found, three within almost identical Anglo-American–styled drop-dial wall cases; Figure 2 shows one of these. Anglo-American cases were made in England from the late 1850s until circa 1914 and were intended for imported American movements; this became a very lucrative trade in the UK.[2]

The remaining two "F.A." movements are now just loose movements, with Figures 1A and 1B illustrating our featured example. Observations and measurements have revealed that the design and size of movement plates, the distance between the front and rear plates, and the arrangement of the main train wheels are all the same as an E. N. Welch Manufacturing Co. ("E.N.W.", Forestville, CT) movement, previously illustrated in a 2014 *Bulletin* article.[3] The inspiration for locating the motion work's intermediate wheel adjacent to the rear plate on the "F.A." movement could have come from any one of a number of contemporary New Haven (CT) Clock Co. movements that use this same arrangement (see Figure 1B).[4] As we now know from Part 1, Charles Cartwright had been importing New Haven Clock Co. clocks, which would have given the Cartwrights ample opportunity to examine such movements. "F.A." movements have a "thick" four-spoke escape wheel, a distinctive shape of escape wheel cock and great wheel click return springs, all of which

Figure 1A. Front of the "First Attempt" movement. Notice that the time side click return spring has now been repaired. AUTHOR'S PHOTO.

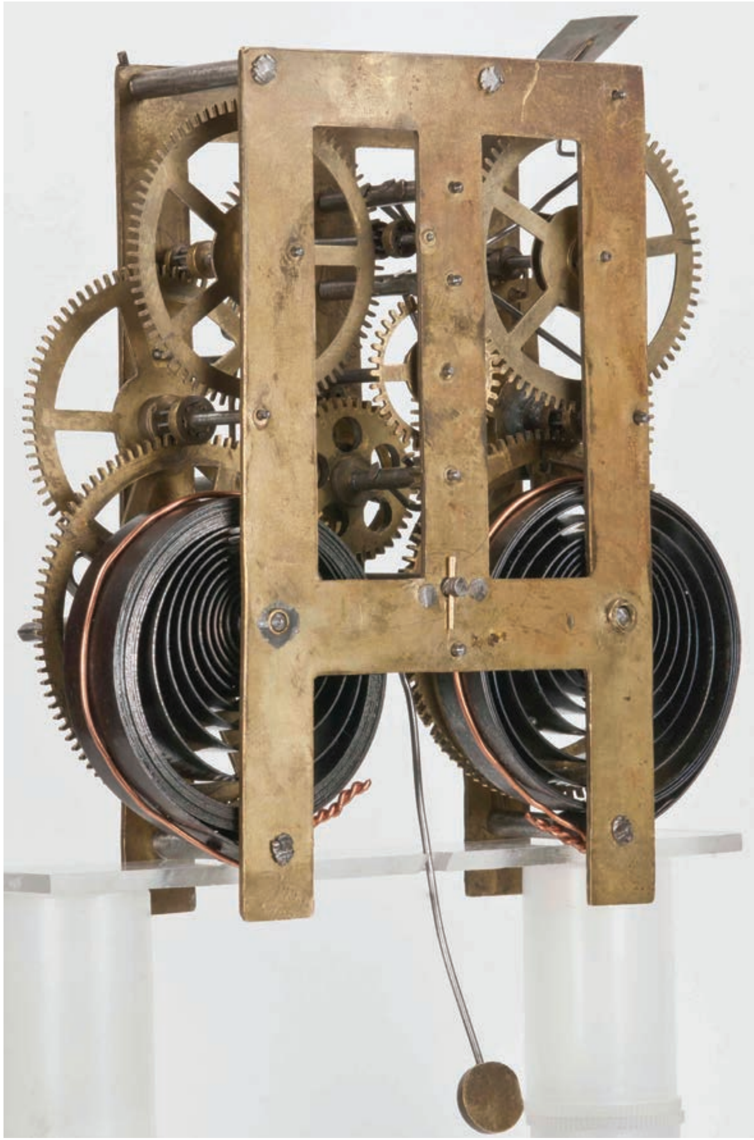


Figure 1B. Right-rear view of the movement in Figure 1A. Note the intermediate wheel adjacent to the rear plate. AUTHOR'S PHOTO.

Figure 1C. Several long-bent teeth belonging to the time train's second wheel, from the movement in Figure 1A. AUTHOR'S PHOTO.

have similarities to the same components on what are believed to be Sperry & Bryant (New York, NY) movements (Figure 1A).[5] It now seems probable that these components could have been seen at Sperry & Bryant's premises "after visits by 'Mr. Cartwright' to some of the principal clock manufactories in the U.S." (as detailed in point 1, in Part 1).

A close inspection of our featured "F.A." example revealed the following defects:

- Four out of the five pillars have off-center holes for pinning the plates together (Figures 1A and 1B).
- All main train wheel teeth have been cut excessively long, resulting in some now being bent (Figures 1A, 1B, and 1C).
- All lantern pinions were poorly constructed, with three of six assemblies having trundle wires not even parallel to their arbors (Figure 1D).
- The riveting of collets to secure wheels and the drop slot disc in place was poorly executed, with repeated blows sometimes used to compensate for the excessive clearance between wheels and their collets (Figures 1E and 1F).
- Four arbor pivots were found to be not even concentric to their arbors (Figure 1E).

This "F.A." movement example therefore conforms to the description that C. & H. Cartwright's first attempt at movement manufacture "produced crude and imperfect results which resulted in a prejudice towards their products" (point 3 in Part 1). From the author's close inspection of the featured "F.A." example, it seems doubtful that this movement would have run very well.

"Early Production" Movements

After the failure of C.& H. Cartwright's first attempt at movement manufacturing, we learn from point 3 in Part 1 that "under the direction of a skilled German foremen [*sic*] the manufacture is now rapidly recovering its lost prestige." Unfortunately, research has not been able to uncover any information on this German foreman.

It now seems possible that C. & H. Cartwright could have decided to adopt a more conservative approach, in the hope of improving movement quality, by copying a single "E.N.W." movement. In the 2014 *Bulletin* article, an "E.N.W." movement example as well as what was believed to be a Cartwright copy, called "Early Production" ("E.P.")

Figure 1D. Time train's second wheel arbor lantern pinion, belonging to the "First Attempt" movement in Figure 1A. Notice how the trundle wires are not parallel to the arbor. AUTHOR'S PHOTO.

Figure 1E. Striking train's third wheel arbor collet and rear pivot, from the movement in Figure 1A. Notice the excessive riveting to secure the wheel and the nonconcentric pivot. AUTHOR'S PHOTO.

Figure 1F. Striking train's drop slot disc on the third wheel arbor, from the movement in Figure 1A. Notice the excessive clearance between the collet and the drop slot disc. AUTHOR'S PHOTO.

movement, were presented, compared, and illustrated.[6] At that time it was believed this "E.P." example (shown here as Figure 3A) was the very first of the possible Cartwright-manufactured movement models.

In light of the new evidence, it seems far more likely that "E.P." could have come directly after "F.A." movements. Both "F.A." and "E.P." movements have plates of the same design and size as "E.N.W." movements, and both also use the same "thick" 4-spoke escape wheel, as well as employing Sperry & Bryant-styled click return springs (Figures 1A and 3A). The "E.P." movement, in Figure 3A, is now considered the earliest model, with only one example so far found, and will be renamed "Early Production No. 1" ("E.P.1"). What is now considered the next/second model has small differences to the first and will be called the "Early Production No. 2" ("E.P.2") (Figure 4A), with only one such example found so far. Then comes the third and last "Early Production No. 3" ("E.P.3") model (Figure 5A), again with differences, with three "E.P.3" model examples found to date.

The small differences between these three models were instrumental in arranging "E.P.1", "E.P.2", and "E.P.3" in their proper chronological sequence. It also gives an insight into how punch-and-die sets for motion-work wheels were being expanded at that time at the (believed) Cartwright Atlantic Clock Works. Notice from the two illustrations of "E.P.1" shown in Figures 3A and 3B (where Figure 3B shows this movement's escape, minute, cannon, and intermediate wheels arranged vertically from top to bottom) how "E.P.1" just uses a single punch-and-die set to create the same "thick" 4 spokes on the escape, minute, and cannon wheels, while the intermediate wheel is solid.

From the two images of "E.P.2" seen in Figures 4A and 4B, notice how the escape wheel was created with a new "thin" 4-spoke punch-and-die set, while the minute, cannon, and intermediate wheels are the same as on "E.P.1". The same two images of the "E.P.3" example seen in Figures 5A and 5B show that this movement once more has the "thin" 4-spoke escape wheel, the same "thick" minute wheel as "E.P.1" and "E.P.2", now a "thin" 4-spoke cannon wheel created with the same punch-and-die set previously used just for the escape wheel, and now a "thin" 4-spoke intermediate wheel created with a new, smaller punch-and-die set. All "E.P." movements were very well made and equal in quality to the "E.N.W." movements they copied; this supports the statement that "under the direction

Figure 2. Remains of an Anglo-American–styled drop dial case containing a "First Attempt" movement. AUTHOR'S PHOTO.

of a skilled German foremen [*sic*] the manufacture is now rapidly recovering its lost prestige" (point 3, Part 1). Also noted previously in the 2014 *Bulletin* review were small differences between "E.N.W." and "E.P." in that "E.P." movements have comma-shaped hammers rather than round, and a wider (top to bottom) lower plate bar when compared with "E.N.W." examples (Figures 3A, 4A, 5A). The small number of "E.P." examples found suggests their manufacturing period was short, possibly only for two years maximum, and led directly to the next movement model (to be investigated in Part 3), previously called "Square Nuts," being manufactured possibly around 1870.

Figures 3C and 3D show the Anglo-American–styled drop-dial case in which the "E.P.1" movement was found. The main body of this case was made from oak and pine with the front veneered in rosewood with mother-of-pearl and pewter inlay; alternative images of this case have been presented before

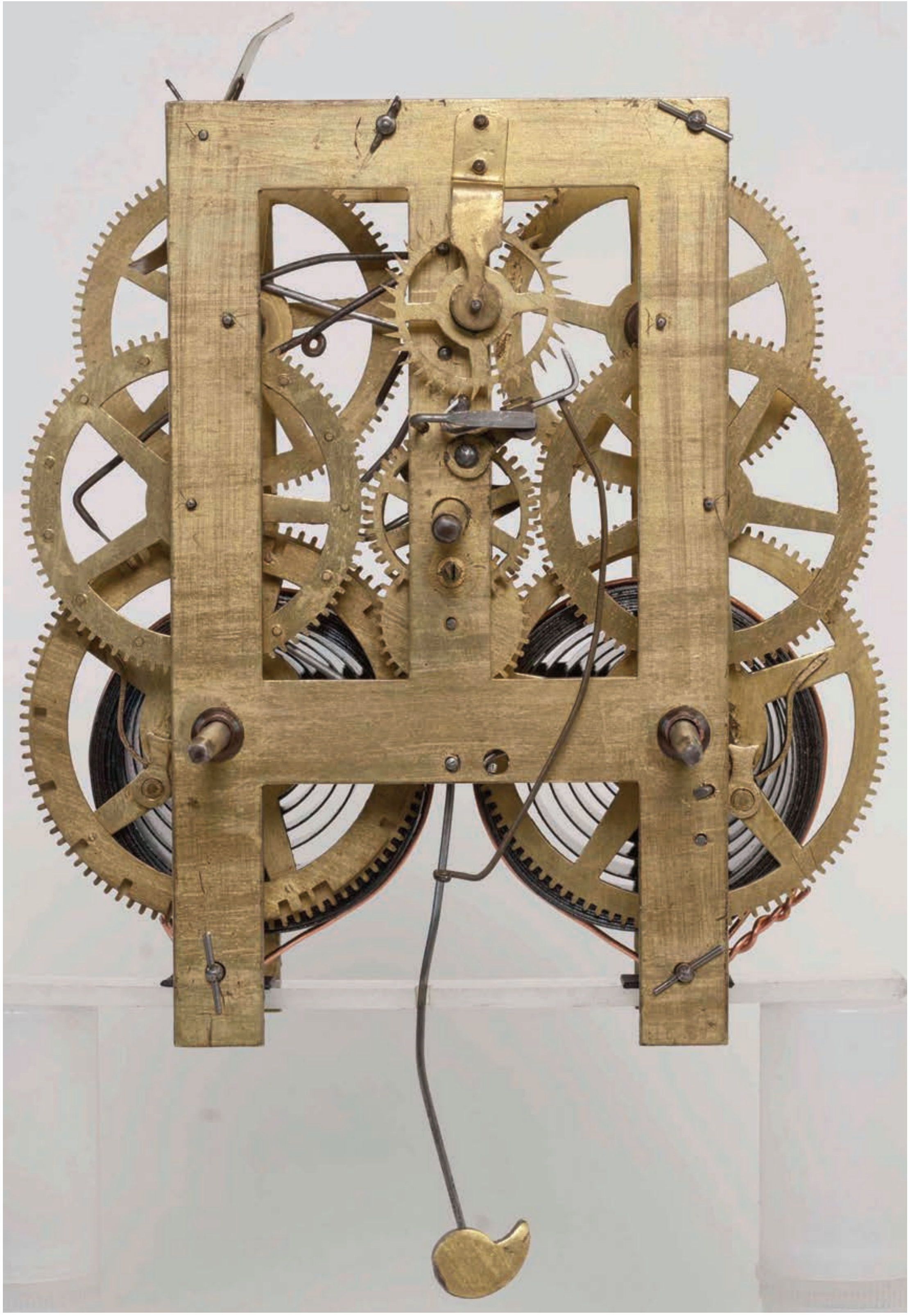


Figure 3A. Front of "Early Production No. 1" movement. AUTHOR'S PHOTO.

Figure 3B. Escape, minute, cannon, and intermediate wheels (arranged from top to bottom) from the "Early Production No. 1" movement in Figure 3A. AUTHOR'S PHOTO.

in the *Bulletin*.[7] Notice from Figure 3D how the pendulum bob is accessed, with some difficulty, through the hinged side door and how the wooden dial surround is pegged to the case box.[8] It is now known that "E.P.2" was found in a non-original case so will not be shown. The "E.P.3" movement example shown in Figure 5A was found within an unusual 21" h x 14" w rosewood and ebony veneered (on pine) round top mantel case with fretwork panel detail (Figure 5C). As this case has a permanently fixed backboard, the "E.P.3" movement can only be accessed through the 6 ½" diameter dial hole seen in Figure 5D. The attachment and adjustment of the pendulum bob is through a 4½" semicircular hole in the base of the case (Figure 5E). Attaching and adjusting the pendulum bob on either of these two "E.P." movement cases is not easy, which could suggest they came from a source other than the Cartwright factory. Both of the other two "E.P.3" movement examples found were seen in photographs only; one is now just a loose movement and the second is still in a case but not illustrated.

Part 3 of this article will examine "Square Nut" movements for clues regarding their whereabouts within the technological development that now appears to be taking place at C. & H. Cartwright's Atlantic Clock Works.

Notes and References

1. Peter Gosnell, "The Atlantic Clock Works of Birmingham, England, Revealed: Part 1: Charles Cartwright & Sons," *Watch & Clock Bulletin* 65, no. 461 (January/February 2023): 39–43.
2. The illustration sheet published by William Baker of Birmingham, England (circa 1868) showing 43 different designs of Anglo-American wall cases was included in the *Bulletin*: "Research Activities and News," *NAWCC Bulletin* 45, no. 342 (February 2003): 109, Figure 15.
3. "Research Activities and News," *Watch & Clock Bulletin* 56, no. 407 (January/February 2014): 100, Figure 1.
4. "Research Activities and News," *Watch & Clock Bulletin* 55, no. 401 (January/February 2013):

3C

3D

Figure 3C. Anglo-American–styled drop-dial case containing the "Early Production No. 1" movement in Figure 3A. AUTHOR'S PHOTO.

Figure 3D. Left-side view of the case seen in Figure 3C. Notice the open pendulum access door and the peg securing the dial surround to the case box. AUTHOR'S PHOTO.

4A

4B

Figure 4A. Front of the "Early Production No. 2" movement. AUTHOR'S PHOTO.

Figure 4B. Escape, minute, cannon, and intermediate wheels (arranged from top to bottom) from "Early Production No. 2" movement in Figure 4A. AUTHOR'S PHOTO.

Figure 5A. Front of the "Early Production No. 3" movement. AUTHOR'S PHOTO.

Figure 5B. Escape, minute, cannon, and intermediate wheels (arranged from top to bottom) from the "Early Production No. 3" movement in Figure 5A. AUTHOR'S PHOTO.

98–99, Figures 9A–9F; "Research Activities and News," *Watch & Clock Bulletin* 55, no. 404 (July/August 2013): 444–45, Figures 15A–15F.

5. Kenneth D. Roberts and Snowden Taylor, *Forestville Clockmakers* (Fitzwilliam, NH: Ken Roberts Publishing Co., 1992), 149, Figure 117C; "Research Activities and News," *NAWCC Bulletin* 45, no. 344 (June 2003): 354, Figure 12C.
6. "Research Activities and News," *Watch & Clock Bulletin* 56, no. 407 (January/February 2014): 100–2, Figures 1 and 2A–2M.
7. "Research Activities and News," *Watch & Clock Bulletin* 56, no. 407 (January/February 2014): 101, Figures 2A–2F.

8. Such design features originated on cases intended for earlier English fusee movements from about 1775 onwards, where the movement is attached to the back of the dial and the pendulum rod and bob is a single unit. It appears that English casemakers were slow to adapt their case design for these new imported American movements.

About the Author

Peter Gosnell joined the NAWCC in 1997 and between 2001 and 2008 made yearly visits to the US to study the development of the Connecticut brass clock movement with the guidance of the late Dr. Snowden Taylor. Subsequently, Peter's research has focused on early industrialized clockmaking in England, with a number of articles on the subject published in the *Bulletin*.

Figure 5C. Right-front view of the rosewood and ebony veneered round top mantel case containing the "Early Production No. 3" movement in Figure 5A. Notice the middle fretwork panel with the replaced blue silk behind. AUTHOR'S PHOTO.

Figure 5D. Same case as seen in Figure 5C with the dial removed to show the 6 ½" diameter movement access hole. AUTHOR'S PHOTO.

Figure 5E. Base of the case seen in Figure 5C with the 4 ½" semicircular pendulum bob access hole visible. AUTHOR'S PHOTO.

22 Key Points from Published Accounts Describing the Activities of C. & H. Cartwright at Atlantic Clock Works

The author's comments are bracketed in italics.

1. The manufacture of machine-made clocks at C. & H. Cartwright, Atlantic Clock Works, 15 Cumberland Street, Birmingham was started in 1867 after visits by "Mr. Cartwright" to some of the principal clock manufactories in the U.S. (IMTA 1878)

2. Their plant and Machinery were based on the American model. (IMTA 1878)

3. The first attempts at machine made clocks during the first few years produced crude and imperfect results which resulted in a prejudice towards their products. Under the direction of a skilled German foremen [*sic*] the manufacture is now rapidly recovering its lost prestige. (IMTA 1878)

4. During the visit of the J&M correspondent in December 1875 both striking and timepiece movements were being manufactured.

5. To make the mainsprings long bands of spring steel are cut by circular shears into strips that were then edged, tempered and buffed and then cut to length, punched at the ends, coiled and coloured and are then ready for placing in the barrel of the clock [*As will be seen, the proposed movements now thought to have been manufactured by C. & H. Cartwright do not have their mainsprings contained within barrels, a troubling anomaly that perhaps originated from an error made by the reviewer who would have been more familiar with English movements, all with barrels*]. (J&M 1875)

6. The brasswork for movements [*plates*], wheels, pinions etc. are all manufactured on the premises. The composition of the brass used is controlled by one of the principals and is one of the firm's secrets. (J&M 1875)

7. They made their own brass bezels from rolled brass strip. (J&M 1875)

8. Movement manufacture took place in a distinct block of buildings with the respective processes being carried on in at least six separate rooms. In some rooms 25 to 30 persons were employed. (J&M 1875)

9. Movement plates were made in the cutting room with apertures and pinion [*probably large pivot*] holes formed with a steam press. (J&M 1875)

10. Wheel blanks were also formed with the aid of a steam press. (J&M 1875)

11. The wheel cutting machine was about 2-foot square and could cut 30 to 40 wheels simultaneously. (J&M 1875)

12. Wheel arbors were cut from steel wire and then collets driven on by hand. The part[ly] completed arbor was then finished again by hand on a lathe. (J&M 1875)

13. A machine produced the holes in pinions by indexing and drilling each hole in a single operation [*obviously lantern pinions*]. (J&M 1875)

14. In the fitting room the workman assembled the clock movement by taking each component one-by-one from its box. A skilled workman then properly adjusted the parts and affixed the escapement to put the movement in going order. Movements were then tested for two to three weeks with one to two hundred movements on test at any one time. Afterwards they were transferred to the finishing shop to be fitted into a case and then proceeded to the warehouse ready for sale. (J&M 1875)

15. Basic cases are made with deal [*pine*] planks with oak, mahogany, rosewood, and walnut logs converted into veneers that could then be applied to bodies. (J&M 1875)

16. The wood shop had ribbon saws and steam driven planing machines. (J&M 1875)

17. Two European patterns of wooden cased wall clocks for shops, offices and dining rooms were produced: large dials [*dials would have meant drop dials, too*] with marquetry or inlay, and Vienna Regulator styled cases with mirror-backed pendulum box and imitation mercury pendulum [*these are both typical Anglo-American case styles*]. (IMTA 1878, 1879, 1880)

18. Complete clocks could be exported to India, China, Japan, Australia, and America. (J&M 1875)

19. By December 1875 the factory was capable of producing 600–700 clocks a week. (J&M 1875)

20. By June 1878 the factory had been re-organised with skilled practical men, new machinery, and a one-third price cut. (IMTA 1878)

21. By January 1879 production could be as much as 800–1,000 clocks a week. (IMTA 1879)

22. In April 1880 "Mr. Cartwright" had a cheap one-day duration wooden cased cottage or kitchen clock in hand, that was expected to end the reign of German examples of the same style of clocks, costing less than the original American examples. (IMTA 1880)

IMTA: *The Ironmonger and Metal Trades' Advertiser* (June 29, 1878; January 11, 1879; April 10, 1880)

J&M: *The Jeweller and Metalworker* (December 15, 1875)

Regulating a Pendulum's Timekeeping

BY C. STUART KELLEY (VA)

Once a week I wind my clocks and set them to time. Each clock has a pendulum with a rating nut beneath its bob, and turning the rating nut up or down changes the length of the pendulum, which changes the timekeeping of the clock. I adjust each rating nut to what I hope will correct any error accumulated over the past week. My goal is to achieve the best timekeeping I can.

Unfortunately, each clock's timekeeping varies from week to week. I make a guess about how many turns to take of each rating nut, hoping I've guessed right and hoping that next week each clock will end the week right on time. It's unpredictable, though, for at the end of the next week some clocks are adjusted well, others not so well. The reasons for this are temperature variations, maybe humidity and barometric pressure variations, drying of oil, and probably other reasons as well. I wondered if I could find a rational method for adjusting the timekeeping of my clocks instead of relying on guesswork.

Here's an equation I developed that assists my weekly adjustments. And, as I've found, it does help.

$$\text{Number of turns} = 2\,L\,t\,N\,/\,T$$

The scientific basis for my equation is presented at the end of this article. The number of turns the rating nut needs is determined by the following:

- **L** Length of the pendulum (approximately the distance from the suspension point to the center of the bob, measured in inches)
- **t** Error in timekeeping (measured in minutes)
- **N** Number of threads per inch of the rating nut
- **T** Duration of timekeeping (T = one week = 7 days per week x 24 hours per day x 60 minutes per hour = 10,080 minutes)

Here's an example of how I use my equation. Suppose my clock with an L = 40" pendulum with N = 32 threads per inch lost t = 3 minutes last week. (That clock, by an unknown maker, is shown in Figure 1A and its pendulum is shown in Figure 1B.) The number of turns of the rating nut (beneath the bob) needed to bring my clock into regulation is

$$\text{Number of turns} = 2 \times 40 \times 3 \times 32\,/\,(7 \times 24 \times 60) = 0.76 \text{ turns}$$

Turning my clock's rating nut about three-quarters of a turn upwards will correct for last week's error. Last week's error may vary a bit from next week's error, but by applying my equation I have corrected the clock's error of the past week, and next week's error should be substantially less.

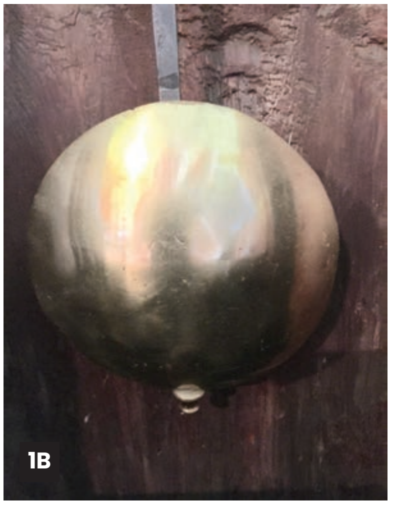


Figure 1. (A) Tall case clock by an unknown maker and (B) its pendulum. AUTHOR'S PHOTOS.

The left-side to right-side period of a 40” pendulum is very close to 1 second. This means that with a rating nut threaded at 32 threads per inch, one-quarter of a turn will correct for 1 minute of error over the duration of a week. It would be very useful to inscribe four equally spaced marks around the circumference of the rating nut, indicating that each quarter turn will correct for 1 minute per week of error.

I find it helps to have a scrap of paper nearby on which I’ve written the value of 2 L N / T for each clock, so all I have to do is to note how many minutes each clock has gained or lost and multiply it by that clock’s value of 2 L N / T to get the number of turns needed. For example, one of my clocks has values of L = 9”, and N = 32 turns per inch, so 2 L N / T equals about 0.06 turns per minute lost or gained per week. Figure 2A shows that clock, made around 1825 by Desbois & Wheeler in London. Its pendulum assembly is shown in Figure 2B. The rating nut is above the bob for easy access. If that clock gained 6 minutes last week, I take a third of a downward turn of the rating nut (6 minutes per week x 0.060 turns per minute per week is 0.36 turn, about one-third of a turn). If I inscribe the circumference of that rating nut with 16 equally spaced marks, moving the rating nut from one mark to an adjacent mark corrects for 1 minute per week gained or lost. This might be hard to inscribe, but it would be useful to use.

About the Author

Dr. C. Stuart Kelley is a retired nuclear physicist who spent his career working for the US Defense Department. He has published numerous articles on nuclear weapons’ effects, solid-state physics, chemistry, mathematics, and optics. His horological interests center on early English clocks and the physics of the pendulum.

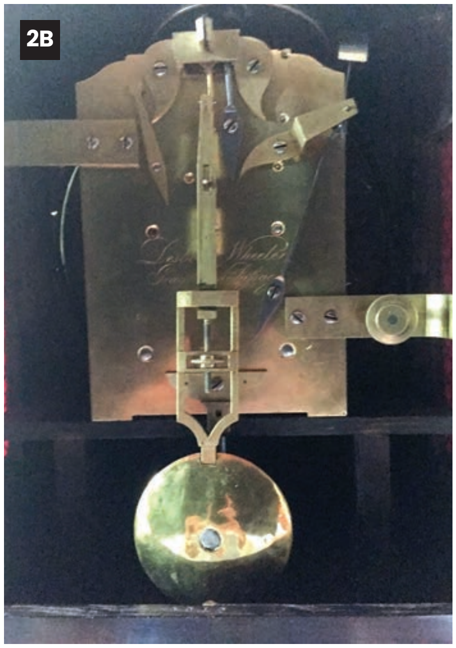


Figure 2. (A) A clock made ca. 1825 by Desbois & Wheeler, London. (B) Pendulum assembly, with the rating nut above the bob for easy access.
AUTHOR’S PHOTOS.

Equation Explanation

Here's the origin of my equation. The time it takes for a pendulum to swing from extreme left to extreme right is its horological period (P), which depends on its length (L) by this well-known equation:

$$P^2 = \pi^2 (L / g)$$

Depending on the units of measure you use, the acceleration (g) due to gravity is 9.82 m/sec^2, 32.2 ft/sec^2, 386 in/sec^2. The Greek letter π (pi) refers to a number approximately 3.1416.

If L changes by a little bit (b) then P changes by a little bit (p), and the equation above becomes

$$(P + p)^2 = \pi^2 (L + b) / g = \pi^2 L / g + \pi^2 b / g$$
$$= P^2 + \pi^2 b / g$$

Equating the left-most and the right-most sides of the equation above:

$$P^2 + 2 P p + p^2 = P^2 + \pi^2 b / g$$

$$2 P p + p^2 = (\pi^2) b / g = (P^2 g / L) b / g$$
$$= P^2 b / L$$

The first equation above was used to replace π^2 with $P^2 g / L$.

P is much greater than p, and 2 P p is much greater than p^2, so there's very little loss in accuracy by replacing p^2 by zero in the left-most side of the last equation above.

$$b = 2 L p / P$$

If the pendulum's rating nut has N threads per inch, multiplying the equation above by N gives

$$\#\ turns = 2 L p N / P$$

If the pendulum beats X times per week, then $X P \pm X p$ is equal to the time T (10,080 minutes), and X p is the time error t over a week. $X P \pm X p$ is approximated well by X P. Multiplying the numerator and the denominator in the above equation by X gives my equation in the text.

$$\#\ turns = 2 L X p N / X P = 2 L t N / T$$

To get the number of degrees to turn the rating nut, multiply this equation by 360 degrees per turn.

$$\#\ degrees = 720 L t N / P$$

Adjusting Swinging-Baton Grasshopper Clocks

BY ROBERT GARY, NAWCC FELLOW (CA)

The grasshopper escapement was developed by John Harrison in the early 1720s in an attempt to reduce friction and thereby ensure that the hands moved at a constant rate. I want to stress that this article is not about disassembling, cleaning, and reassembling swinging-baton grasshopper clocks. This article deals only with setting an operational clock to run as designed (Figure 1). I have not dismantled one of these clocks.

Numerous companies have manufactured clocks of this style. They come from several countries, the UK and China among them. The US Customs and Border Protection website states, "In the United States, the marking statute, Section 304, Tariff Act of 1930, as amended (19 U.S.C. 1304) requires that, unless excepted, every article of foreign origin (or its container) imported into the U.S. shall be marked with its country of origin."[1] In specific reference to clocks, it stipulates that "the country of origin of the movement should appear conspicuously and legibly on the face of the dial or on the outside of the back." There are no such markings on my clock; the only marking on it reads "The Grasshopper Clock" on both the front and backplates. I have no way of knowing its origin.

There are many different variations of this style of clock, but the guidance given here should apply with only minor adjustments to most if not all of these.

Figure 1. The swinging-baton clock I purchased at an NAWCC mart in California. AUTHOR'S PHOTO.

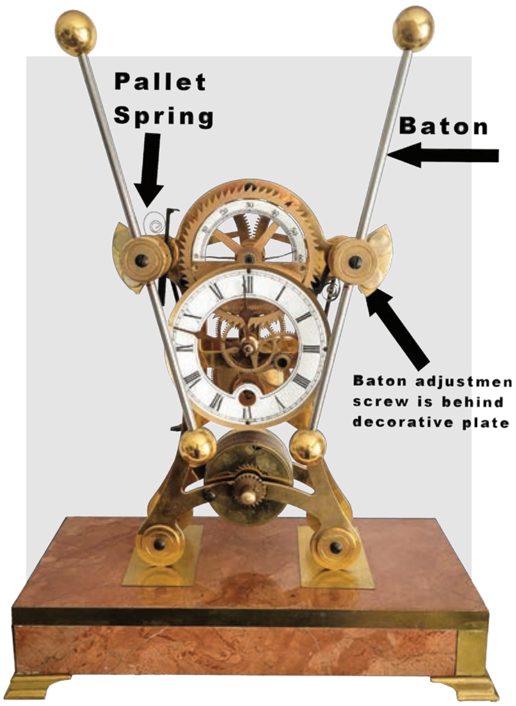


Figure 2. Clock parts labeled using the author's nomenclature. AUTHOR'S PHOTO.

Figure 3. Decorative plate on the swinging arm. AUTHOR'S PHOTO.

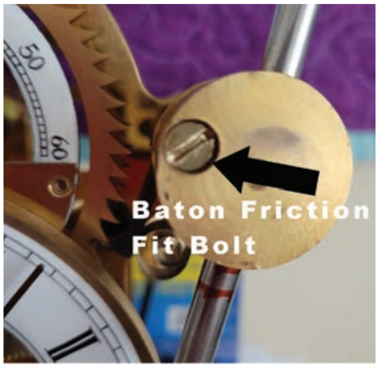


Figure 4. Baton length adjustment on the pallet adjustment assembly. AUTHOR'S PHOTO.

Soon after I purchased this clock, I discovered that there was virtually no information on this style, not even how to adjust the rate. If anyone knows of a source, please let me know. Due to my inability to find so much as standardized names for the parts unique to swinging-baton grasshopper clocks, I have arbitrarily assigned them names for this article (Figure 2). If anyone has found a parts list for these clocks, please share it with me and I will amend my terms to match the list's terminology.

I have heard several myths about these clocks, such as they are horrible timekeepers, they skip teeth no matter how well you adjust them, they are prone to run away, and they make an annoying clunking noise. We shall investigate these myths and see which ones might be true and which are false.

I purchased my clock at a local mart. The seller was selling it because he thought one of the pallet springs was broken and needed replacement. It turned out that the spring was easy to replace. This solved that issue, but there were many other problems yet to be resolved:

- The clock ran extremely fast, gaining minutes per hour.
- The pallets skipped multiple teeth at a time and performed this way in a seemingly random fashion.
- The pallets would fail to catch the teeth of the escape wheel, causing a runaway of the train. Then suddenly the pallet would engage, slamming to a jarring stop. Needless to say, this is a serious problem in any clock, especially a clock of this type.
- The batons were uneven, one being higher and the other lower than their midpoints.

Note of Caution: If your clock is essentially original in its assembly and you feel the original settings are at least close enough to allow the clock run, *do not* attempt to adjust either the front batons or the pallet assemblies. Changing either of these when unnecessary is only creating major headaches for yourself.

Before attempting adjustments, make certain that the two front batons are of equal length. On my clock, this is done via a screw that is visible once a decorative plate is removed from the baton hub (Figures 3–4). Damage done to the slot of the setscrew by previous individuals can be seen in in the photo. Since this screw is hidden behind a decorative plate and remains functional, I did not attempt to repair the slots.

The first order of the day was to stop the runaway tendency when the escapement is no longer in contact with the escape wheel, causing it to spin uncontrollably. Gross change in the pallet depth is accomplished using what I called the pallet assembly (Figure 5). The pallet assembly on my clock is adjusted by rotating it on its axis via a setscrew with a hex head on the side of the assembly (Figure 6). The use of setscrews is, in my opinion, unfortunate because it makes setting these very tedious. Even the most minor movement makes a big difference in the depths of the pallets. The movement necessary to tighten the setscrew, or even to put the hex wrench into place, can alter the placement significantly, necessitating numerous attempts to get the correct depthing. Proper setting is accomplished only by trial and error and can be frustrating and time consuming. The pallets should seat fully into the teeth of the escape wheel but not rest against the back of the notch or it may jam. When you make this adjustment, I recommend you have no more than one to one-and-a-half winds on the fusee to reduce the chance of causing damage in case it gets away from you—and it undoubtedly will. Fine adjustments to the depthing can be accomplished by squeezing or expanding the pallet springs on each side of the escape wheel (Figure 7).

Figure 5. Pallet adjustment assembly. AUTHOR'S PHOTO.

Figure 6. Pallet depth adjustment. AUTHOR'S PHOTO.

Be gentle, as a hair's breadth (1 mm or less) is all it takes to make major changes in the depthing. Too much and the pallet will jam and fail to release the tooth, too little and skipping teeth or even runaway will result. Again, the process is trial and error.

At this point, a close examination of each tooth of the escape wheel using magnification is in order to identify any bent, broken, or deformed teeth caused by the sudden impact of the pallets seating home after repeated skips or runaway. I employed my digital microscope for this task (Figure 8). Both a diamond dust mini-file and smoothing pliers were used to correct the burrs on the teeth and to correct the angle of the tips of the teeth that had been distorted by the impact sustained due to running away and skipping and then stopping abruptly. This work was done in situ to avoid dismantling the timepiece. As previously mentioned, these clocks are extremely sensitive to friction, making attention to the escape wheel teeth essential.

Following the adjustments described above, my clock began to run properly, with no skipping of teeth, no jamming, no runaway, and no clunking noises, although it ran incredibly fast at this point. The batons are a compound pendulum,[2] and so it must be adjusted in reverse to that of a simple pendulum. To slow the rate of the clock, you must move the batons up. To increase the speed, you must move the batons down. Again, even a hair's breadth makes a monumental change in the rate. I marked the starting point of my adjustments to the batons so I could be certain that I was affecting the height of the arms (see Figure 4). The use of a height gauge would undoubtedly make this job easier and more precise. On my clock, the sweet spot was with the upper portion of the baton slightly longer than that below the center point. If you must adjust the batons, place the barrels on the rear batons in the middle of the threaded rod to give room for final rate adjustments later (Figure 9). After days of making constant tiny adjustments to the heights of the batons, the rate approached that desired. The use of a timing meter such as the MicroSet™ would make this process much faster, although frustrating micro-adjustments to the batons would still be necessary.

Figure 8. Digital microscope in use. AUTHOR'S PHOTO.

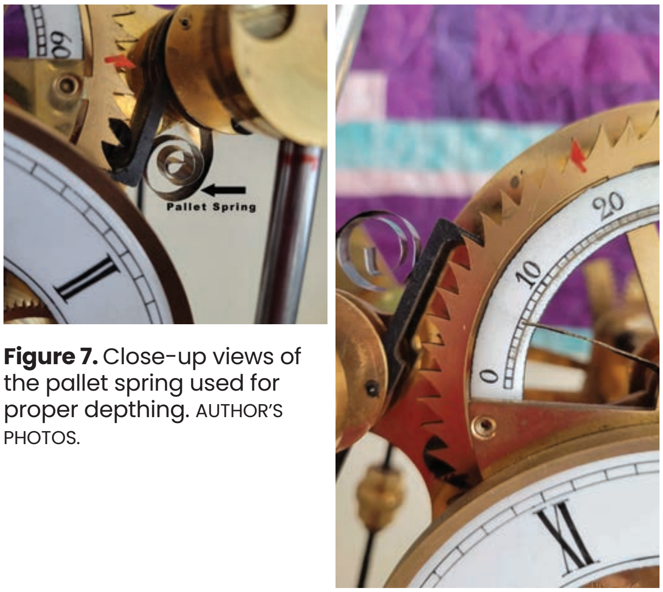


Figure 7. Close-up views of the pallet spring used for proper depthing. AUTHOR'S PHOTOS.

With all of this preliminary work accomplished, I wound the clock fully using the crank. I have not attempted to open the spring barrel on this clock, but judging from how stiff it is to wind, even using a crank, the spring must be huge and therefore very, very strong. It takes all of my strength to wind it; I seriously doubt if a frail person could. I have to hold the clock in place with my free hand, and even then it twists and slides across the mantel as I crank. Winding this clock is not for the faint of heart!

Normally, clocks run one day (30 hours or so), eight days, one month, and so on. Fully wound and running, my clock ran for four days, four hours, and 42 minutes, at which point it had reached the end of its cable as can be seen in Figure 10. Subsequent windings have had run times of just under and just over four days. Does it bother me that I will be winding this clock every four days? Not really. I can forget to wind it after four days as easily as I forget to wind them after seven days. Why the maker designed a clock to run for such a weird time period, I have no idea, but there is no room on either the fusee or the barrel to increase the length of the cable. I have heard that other models of this clock run a full seven days. It would be interesting to compare the size and strength of the mainsprings between my clock and similar clocks.

Once the clock was running well and keeping somewhat decent time, smaller adjustments to the rate were made using the barrel weights on the threaded rear batons (see Figure 9). Again, this is a compound pendulum, so moving the batons up slows the clock, and moving them down speeds up the rate. Both barrels must be identical in their positioning.

I must admit that I had great fun learning the intricacies of this timepiece, as frustrating as it was. Hopefully, your clock won't need more than simple adjustments.

Were the myths about these clocks true? It is a fallacy to say that they always skip. With proper and painstaking adjustments, they do not skip teeth and they do not suffer from running away where the escape wheel spins rapidly without locking the escapement.

Are they accurate timekeepers? You certainly cannot prove it by me. The rate varies markedly from the beginning at a full wind to that approaching the end of the wind.

The length of the run time is inconsistent from day to day. I have concluded that the fusee was not designed for this specific clock to compensate for the changing power of the spring as it winds down. I will continue with my adjustments. Perhaps I can find a happy middle ground to keep it somewhat accurate, but with only a three- to four-day run time, it may not be worth the effort.

I purchased this clock simply because I enjoy watching the action as it runs and learning how it functions. Regardless of its timekeeping ability, I continue to enjoy watching it in action and I hope you find useful information in this article.

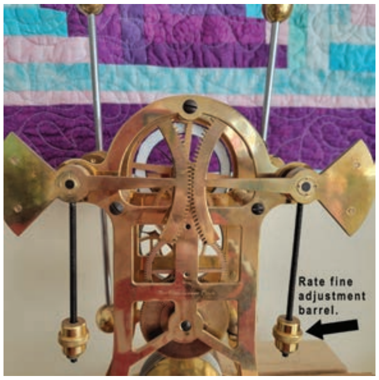


Figure 9. Back of the clock showing the rate adjustment barrels. AUTHOR'S PHOTO.

Figure 10. The run-down cable. AUTHOR'S PHOTO.

Acknowledgment

Bart R. Polachek of Swiss House Clocks in Orlando, FL, was of enormous assistance in helping me understand the workings of this style of clock. His immense expertise is very much appreciated in contributing to this article.

Notes and References

1. U.S. Customs and Border Protection, "Chapter 13 - Country of Origin Marking," https://www.cbp.gov/trade/nafta/guide-customs-procedures/country-origin-marking.

2. Compound pendulum," Oxford Reference, https://www.oxfordreference.com/display/10.1093/oi/authority.20110803095629720: "A pendulum consisting of a rigid body that is free to swing about a horizontal axis. Suppose that the centre of gravity of the rigid body is a distance *d* from the axis, *m* is the mass of the body, and *I* is the moment of inertia of the body about the axis. The equation of motion can be shown to give $I\theta=-mgd\sin\theta$. As with the simple pendulum, this gives approximately simple harmonic motion if θ is small for all time." See also Rubens Sigelmann, "Compound Pendulum and Its Use in Swinger Clocks and Space and Time Measurement," *Watch & Clock Bulletin* 58, no. 419 (January/February 2016), 61–66.

About the Author

Robert Gary has been a member of the NAWCC since 1999, is an NAWCC Fellow, and is currently a member of Ventura and Santa Barbara County (CA) Chapter 190. He has published several articles in the *Watch & Clock Bulletin* over the years. If you have any information to share concerning these swinging-baton grasshopper clocks, please contact Robert at robertsclockworks@frontier.com.

The Ageron Clock/Watch Restoration

BY ROBERT C. WISEMAN (IL)

Repairing and restoring a clock are two different projects. In *repairing* a clock, the clock is complete and generally has all of the original parts; however, one or more of the parts are either worn or broken to the point that new parts must be either found or made based on the design of the original. Mainsprings, suspension springs, balance staffs, and jewels are common replacements in the course of repairing. On the other hand, *restoration* involves more extensive refurbishing of the timepiece. It often requires the making of broken or missing parts that cannot be easily obtained.

Figure 1. Assembled clock/watch showing relative size.
AUTHOR'S PHOTO.

This article focuses on restoration rather than repair. This particular piece, a clock/watch (Figure 1), was made by François Ageron, who, according to F. J. Britten,[1] was active from 1741 to 1779 in Paris. Ageron became a Master Clockmaker in 1741, serving in that position until the early 1780s. His business was sold in 1784.[2]

Phil Stoller is a clock and watch specialist in central Illinois. After working on this restoration, Stoller gave a presentation on his work to the members of NAWCC Central Illinois Chapter 66, which is where I learned about this remarkable project.

About two years ago Stoller received a call from the owner of this clock/watch inquiring about its repair. After the phone conversation and seeing pictures via email, Stoller agreed to receive the clock/watch to examine it and better determine what repairs it might need.

When the clock/watch arrived, it was mostly disassembled, with various parts in several plastic, zippered bags. The owner had previously sent this completely nonworking piece to a clockmaker in Paris, thinking surely a Parisian would be more familiar with this style of piece and would be best suited to work on it. After two years, that clockmaker died, leaving the clock/watch disassembled on his workbench. The owner flew to France to retrieve all of the pieces, hoping that he would be able to get all of the clock/watch's parts.

After looking at all of the parts and reassembling as much as he could, Stoller became aware of the full function of this 30-hour clock/watch. It was a fusee with a verge escapement, equipped with a quarter repeater, alarm, and calendar complications housed in a silver case. He also became aware that there were many missing parts. By this time the estate of the deceased French clockmaker had been sold and there was no chance of retrieving the missing parts. To make this a complete, working clock/watch again would require the extensive effort of making all of the missing parts. Most likely the cost of restoration would exceed the value of the clock/watch. Because of this, Stoller advised the

Figure 2. The assembled works showing the balance guard and square pinion for the key winding. AUTHOR'S PHOTO.

owner that if it had no significant sentimental value, it could be reassembled as is and serve as a nice wall ornament but not a working clock.

According to the owner, Ageron had been commissioned by the owner's family to make this clock/watch with its specific complications. During the many years since it had been made, it had been held by the family and passed down from generation to generation since the mid-1700s. Regardless of the cost, the owner wanted the clock/watch to be restored. Stoller agreed to restore it, with the understanding that the timeline would have to be open-ended.

Some of the missing parts included several different wheels and pinions. The making of a wheel and pinion would not be too difficult if an original piece were available for determining the size, number of teeth, and their pitch; however, the only thing Stoller had to go by was the distance between the pivot holes. With this measurement, he could estimate the diameters of the wheels and assign tooth counts, which would be similar in pitch to the other gears. This was necessary so as not to look out of place in regard to the other gears. The brass wheels were to be spoked in the matching fashion of the original wheels. Each gear Stoller made would be polished and gold-plated, though not mercury-gilded. All told, Stoller had to fabricate 16 gears, seven steel pinions, and nine brass gears in order to complete the restoration (Figures 2 and 3).

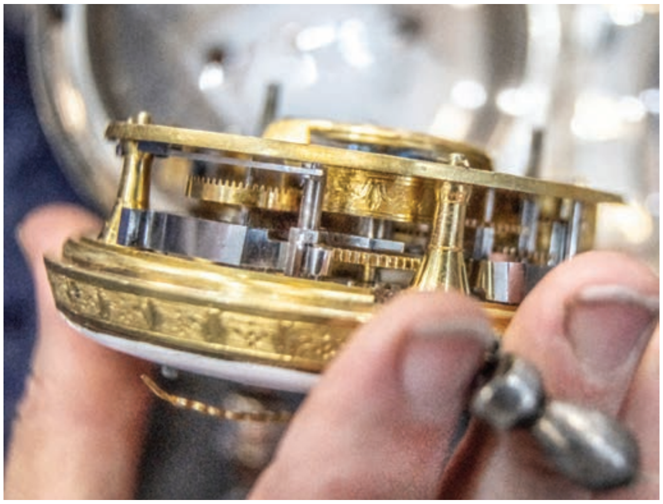


Figure 3. Edge of the works showing the wheels and pinion that were fabricated. AUTHOR'S PHOTO.

The original hairspring was broken, and it seemed as though the Parisian restorer had been intending to replace it with a modern bronze hairspring similar to one that was from his workshop. The included hairspring proved to be too soft and caused the clock/watch to run too slow. Stoller found among his own inventory an old clock-sized steel hairspring that could be fitted for this clock/watch. Unfortunately, this was too stiff and made the clock/watch run fast. Stoller was able to weaken the spring by stretching it out and, with fine wet/dry sandpaper, taking off 0.02 mm of the thickness. This was sufficient to bring the spring within a range where it could be regulated.

The alarm hammer was missing entirely. Stoller made one to match the fashion of the two remaining repeater hammers. Also, the spring for one of the repeater hammers had been replaced with a newer spring that was clearly not original. This spring had to be replaced with a more period-appropriate spring. It was found that four screws around the mechanism had been replaced with newer ones that did not match the originals. In each case, Stoller made parts that could pass as original parts and matched the style of the original time period (Figure 4).

Figure 4. The assembled works being placed in the silver case. AUTHOR'S PHOTO.

Thankfully, all of the external and visible parts of the clock/watch, including the hands for the hour, minute, alarm, and calendar, were in the plastic, zippered bags. The enamel dial had a couple of small scratches but otherwise was in good condition with no cracks or hairlines. The owner inquired about replacing the deeply molded convex-concave glass crystal because it had a few scratches. Stoller encouraged him to keep it since it showed waves and bubbles typical of older handblown glass and it matched the vintage of the clock/watch (Figure 5). What was believed to be the original crystal was not replaced.

Working one to two days a week on the restoration, it took Stoller just over one-and-a-half years to complete the restoration. Finally, the time came when the clock/watch was assembled and found to keep reasonable time for a verge fusee clock. The repeater struck correctly with a single strike for every hour and a quick double-strike for every quarter-hour. The loud, clattering alarm bell sounded correctly, as did the calendar. The calendar section for the clock/watch was the only part of the entire mechanism that was complete when received.

Stoller was quick to say that there were problems and glitches in the restoration. However, he also said that restoring a clock/watch of this vintage, which was made with little more than hand files and hammers, was an extreme project in restoration (Figure 6). With more than 250 years since its first tick, it is now ready for a second life. The clock/watch is no longer merely a wall ornament but rather a treasured piece to be enjoyed for its age, beauty, and family history (Figure 7).

Video Records

In order to provide the owner with updates on the progress of the restoration, Stoller posted videos on YouTube explaining what he was doing. This became a 22-video series that can be found by searching for "Ageron French Fusee" or by visiting Stoller's YouTube channel Repivot22 (www.youtube.com/@repivot2253).

Notes and References

1. Cecil Clutton, G. H. Baillie, C. A. Ilbert, *Britten's Old Clocks and Watches and Their Makers*, 8th ed. (London: E. Methuen in association with E. & F. Spon, 1973).

2. See "François Ageron," La Pendulerie, https://www.lapendulerie.com/en/artists/francois-ageron/; see also The Redding Archives, Antique-Horology.com, http://www.antique-horology.org/gallery/asp/object.asp?id=221.

About the Author

Robert C. Wiseman is a retired professor of education at Eastern Illinois University. He holds a doctoral degree from Indiana University in educational communications. Although retired, he continues to write and serve as a consulting editor for *TechTrends*, a juried publication of the Association for Educational Communications and Technology. His work in watches and clocks began with an Elgin watch his grandfather gave him. After being told it could not be repaired, Robert began to teach himself how to repair watches. He currently has a rather large collection of watches and clocks.

Figure 5. Side view showing the high dome crystal. AUTHOR'S PHOTO.

Figure 6. Phil Stoller with the Ageron clock/watch. AUTHOR'S PHOTO.

Figure 7. The completed Ageron clock/watch. AUTHOR'S PHOTO.

An Extraordinary Lancaster Clock Case

BY CHRISTOPHER STORB (PA)

Editor's note: This article is a revised version of what appeared in Incollect Magazine, *vol. 1, no. 2 (2022).*

The clockmaker John George Hoff (1733–1816) immigrated from Grünstadt, Germany, to Philadelphia, PA, in 1765. He arrived with his young daughter and his wife, Justina Margaretha Schnertzel (1743–1806), whom he had married in May 1761. By the time Hoff was in Philadelphia, he was a fully trained clockmaker, presumably having learned the craft from Justina's father, clockmaker George Schnertzel.[1]

The couple was in Lancaster, PA, by 1766 when their son, Michael, was baptized at Trinity Lutheran Church. In Historic Rock Ford's[2] collection is a 30-hour clock and case (Figures 1 and 2), inlaid in sulfur with the date 1766, that has a movement attributed to Hoff. The dial has cast pewter spandrels (the corners of the clock face) and a figure of Father Time in the dial-arch identical to the pewter castings Hoff was to use later on many of his signed clocks.[3] This 30-hour clock and case at Historic Rock Ford is one of a group of at least five closely related cases that includes the Dietrich American Foundation's Hoff 8-day clock described below. Historic Rock Ford's clock case is made of black walnut and is less ornate than the Dietrich Foundation's cherry case, lacking the cross-banded inlay designs on the pendulum door and base panel. Inlaid in sulfur in the hood above the dial is the original owner's name, Christian Schwar, and the precise date, January 18, 1766.

An 8-day clock signed "George Hoff/Lancaster" in the collection of the Dietrich American Foundation is inlaid in pewter with the date 1768. The dial has pewter castings identical to those on the 1766 clock. It is Hoff's earliest signed clock and is housed in one of the most complex cases produced in Lancaster in the second half of the 18th century (Figures 3 and 4).

The George Hoff 8-day movement was constructed in the German manner and has features seen in his other early clocks (Figure 5).[4] The pewter spandrels

Figure 1. Tall clock, Lancaster, PA, 1766, with a movement attributed to George Hoff (1733–1826). Black walnut, tulip poplar, sulfur inlay, pewter, brass, iron, steel, glass. 107"h x 19 ¼"w x 11"d. COURTESY OF HISTORIC ROCK FORD, BEQUEST OF JOHN J. SNYDER JR.; PHOTO BY GAVIN ASHWORTH.

Figure 2. Detail of the hood of the clock illustrated in Figure 1. PHOTO BY ERIN CHANCE, NEW LEAF PHOTOGRAPHY.

Figure 3. Tall clock, made by George Hoff, Lancaster, PA, 1768. Case made by an unknown cabinetmaker, Lancaster County, PA. Cherry, red mulberry, black walnut, atypical fruitwood, lightwood crossbanding, pewter, brass, iron, steel, glass. 105″h x 19 ¾″w x 11″d. Dietrich American Foundation (dietrichamericanfoundation.org). PHOTO BY GAVIN ASHWORTH.

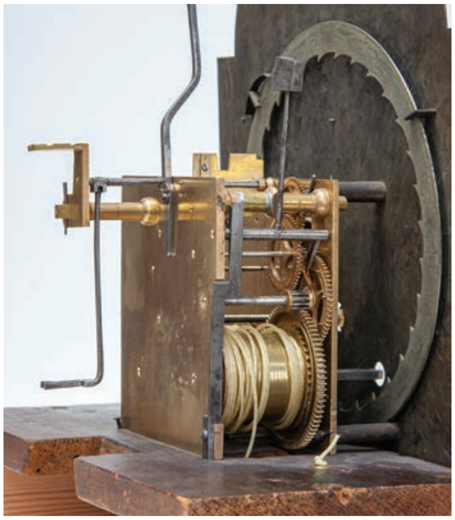


Figure 5. Detail of the clock movement illustrated in Figure. 3. AUTHOR'S PHOTO.

Figure 4. Detail of the hood of the clock and case illustrated in Figure 3. PHOTO BY GAVIN ASHWORTH.

and dial-arch applique of the face are painted with bronze powder suspended in an oil medium. There are traces of earlier coating materials on the reverse surfaces of the spandrels, though it is not known if the first of these coatings was applied as part of the original decorative scheme or was added later (Figure 6).

The metal inlay in the Hoff case was also examined and conserved during the recent survey of the Dietrich American Foundation's collection of furniture and woodwork. It had long been assumed that the metal inlay on the case was brass or gilt silver. This was primarily due to the deterioration of a tinted finish coating applied in 1971 during a previous restoration that had darkened with age. During the recent treatment, this finish was selectively removed, revealing pewter inlay and stringing. The silver color of the pewter presents a greater contrast with the surrounding wood than the previous orange-tinted coating and aids in establishing the original appearance of the case (Figures 7 and 8).

The case housing Hoff's clock is elaborately inlaid with lightwood crossbanding (possibly locust) and pewter. Crossbanded wood inlay on the hood, pendulum door, and base panel is outlined with pewter stringing. Pewter rings adorn the turned balusters of the hood. The date in the arch of the hood was created by pouring molten pewter into numerals carved into the wood. The case is made of diverse hardwoods of a variety of hues. The framing members of the front of the case, the pendulum door, base panel, sides of the upper section of the hood, the lower molding of the hood, and the upper and lower trunk moldings are black cherry. The sides of the lower section of the hood,

Figure 6. Detail of the dial illustrated in Figure 3. AUTHOR'S PHOTO.

Figure 7. Detail of the hood during treatment to remove a discolored coating applied in 1971. AUTHOR'S PHOTO.

Figure 8. Detail of the hood after treatment. AUTHOR'S PHOTO.

sides of the trunk and the base, and the base molding and feet are red mulberry. The corner columns on the trunk and base are made of black walnut. The wood species of the columns on the door of the hood was at first difficult to identify. Microscopic analysis confirmed it to be a species in the genus *Prunus*, possibly black cherry, but is atypical with more numerous and wider rays that may have been stress induced during the tree's growth. The color of the columns is lighter than that of the black cherry of the rest of the case, and they were clearly chosen for their unusual appearance and light color (Figure 9). The effect of the contrasting colors of the different wood species was much more striking originally than it appears today, as the colors have faded toward a similar reddish/brown hue due to oxidation of the wood surfaces. An unknown woodworker combined the orange tint of black cherry, the deep red of mulberry, the dark brown of black walnut, the light-hued atypical cherry with an elaborate scheme of inlaid lightwood crossbanding outlined with pewter stringing to produce a work of extraordinary imagination and artistry.

The Hoff clock case is related to a group of inlaid furniture produced in one or more shops in Lancaster County, PA, most likely located in the borough of Lancaster. The group of more than 20 objects consists of *schranks* (German, loosely translates to closet or wardrobe), chests, and at least five other clock cases inlaid with sulfur or pewter. One case, dated 1762, houses a clock made by Rudy Stoner (1728–69), one of Lancaster's earliest recorded clockmakers[5] and is the only other clock case attributed to this maker that has inlay on the pendulum door and base in addition to inlay on the hood. Like the Hoff clock case, the inlay consists of molten pewter poured into recesses in the wood and crossbanded lightwood outlined with pewter stringing.[6]

Figure 9. Detail of the hood of the clock and case illustrated in Figure 3. AUTHOR'S PHOTO.

The same distinctive geometric design seen on the base of the Hoff clock case is inlaid in sulfur on the lower panels of the doors of two *schranks* in the group (Figure 10). To produce the pattern, only a compass set to a single opening is needed. The design on these three objects has been referred to alternatively as a gordian or lover's knot but is instead a variation of an ancient geometric construction common to cultures around the world. Referred to as the "Seed of Life" or "Flower of Life," the pattern can be found on countless southeastern Pennsylvania decorative objects, from carved wood butter molds to hexagrams painted on barns. As its name implies, the "Seed of Life" has been used as a symbol of blessing, fertility, and protection. Numerous designs can be generated from the initial hexagram, and the maker of this clock case used it to produce a design of three hourglass shapes with his compass. Before the channel for the inlay was cut on the base panel, a line bisecting one of the hourglass shapes was aligned with a diagonal running from the top left corner to the lower right of the panel (Figure 11). This slight rotation, changing the static vertical position to a more dynamic, tumbling alignment, creates the illusion that the design is in motion, mirroring the actual rotation of hands on the clock dial above.

Notes and References

1. Stacy B. C. Wood Jr. and Stephen E. Kramer, *Clockmakers of Lancaster County and Their Clocks, 1750–185*0 (New York: Van Nostrand Reinhold, 1977), 22, 23. Apprentices often lived with their shop master and it was common practice for an apprentice to marry into a family, both in the American colonies and abroad. The term *clockmaker* refers to someone who made the works and face/dial; the wooden case and hood would have been made by a cabinetmaker.

2. Historic Rock Ford in Lancaster, PA, includes the mansion, collections, and grounds of Revolutionary War General Edward Hand; see historicrockford.org.

3. "An Extraordinary Legacy: John J. Snyder Jr. and Early Lancaster County Decorative Arts," *Incollect Magazine*, https://www.incollect.com/articles/an-extraordinary-legacy-john-j-snyder-jr-and-early-lancaster-county-decorative-arts.

4. The German features include lantern pinions, three turned brass pillars joining the brass plates of the movement, a fourth pillar behind the rear plate supporting the back-cock, and an open crutch.

5. See Stacy B. C. Wood Jr., "Rudy Stoner 1728–1769: Early Lancaster, Pennsylvania, Clockmaker," *Bulletin of the National Association of Watch and Clock Collectors, Inc.* 14, no. 186 (February 1977): 21–32.

6. For more on this group of objects, see Lisa Minardi, "Sulfur Inlay in Pennsylvania German Furniture: New Discoveries," in *American Furniture,* ed. Luke Beckerdite (Hanover, NH: University Press of New England for the Chipstone Foundation, 2015), 98–128. For the Rudy Stoner clock, see http://chipstone.dom5183.com/objects-1/info?query=Artist_Maker%20%3D%20%22334%22&sort=0.

About the Author

Christopher Storb is a furniture conservator, woodworking historian, and wood artist. Please send comments and related research to cstorb@gmail.com.

Figure 10. Detail of the base panel of the clock and case illustrated in Figure 3. PHOTO BY GAVIN ASHWORTH.

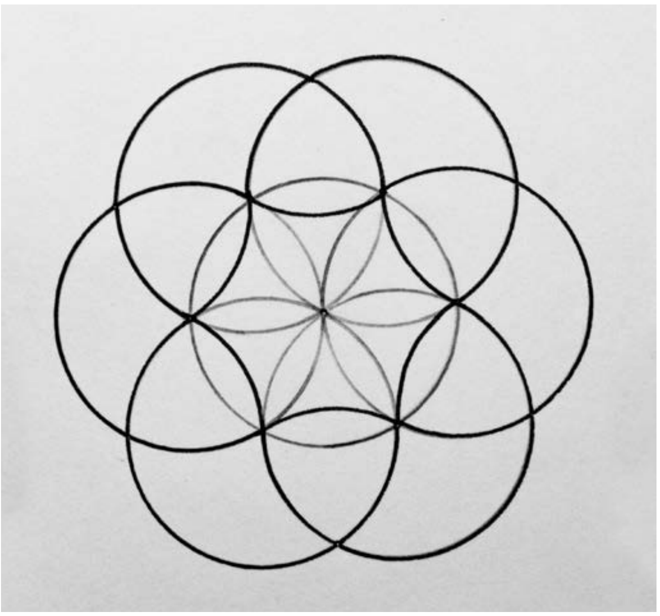


Figure 11. The "Seed of Life" consists of seven overlapping circles of the same size. The pinwheel design created in the center circle is a common decorative device. Using the same compass setting, an hourglass shape is produced by setting the compass point in the appropriate locations. Two more hourglass shapes are drawn and the design is rotated so that one of the hourglass shapes aligns with a diagonal of the square. AUTHOR'S ILLUSTRATION.

Research Activities & News

Ninety-Two Percent Found!

Charles Allison Timepieces

BY GREGORY GERARD ALLISON (NY)

Watch & Clock Bulletin readers may recall my article "Quest for Information" in the July/August 2020 Research Activities & News column. That article highlighted my grandfather Charles Allison (Figure 1) and his work in the Rochester, NY, and Sherman Oaks, CA, watchmaker communities. Watch repair was his trade, but from the 1920s to the 1950s, Charlie designed and built 13 artisan timepieces for display only (Figure 2). Celebrities and craftsmen alike visited his shop in Sherman Oaks (and later, Woodland Hills) and marveled at his collection by recording their comments in his shop book (Figure 3).

By 2017, I had inherited one of my grandfather's unusual clocks upon my father's death; the remaining 12 had been missing for more than 60 years. That December, my quest began to seek out my grandfather's collection and fulfill my childhood desire to find Charlie's clocks.

Figure 1. Watchmaker Charles Allison advertising his shop at 15310 Ventura Blvd., Sherman Oaks, CA, ca. 1938.

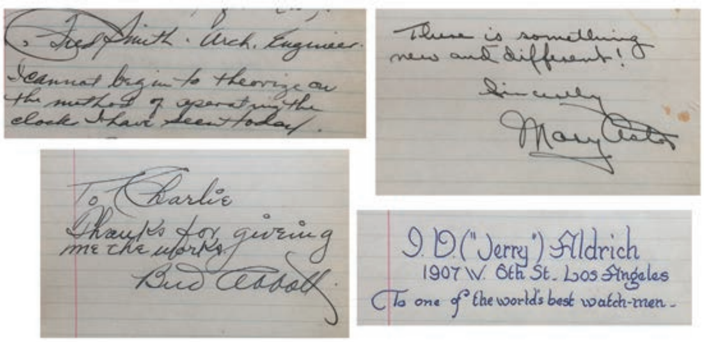


Figure 3. Some of the guests who signed Charles Allison's guest book at his shop: Fred Smith, Bud Abbott, Mary Astor, and Jerry Aldrich.

Figure 2. Timepieces by Charles Allison on display at his shop at 22851 Ventura Blvd, Woodland Hills, CA, ca. 1953, including: (top shelf) American Mystery; (middle shelf, left to right) Mini-Grandfather, Three-Legged, Bakelite Torsion, Greenwich Mean, World; (bottom shelf, left to right) Couples, Alpha/Omega, Brass Torsion, Mini-Steeple, Paperweight; (below shelf) Pole.

The only clue I had was the name of a stepson to my grandfather, with the very common name of Jimmy Smith. The subsequent four years led me into the world of horology, including the NAWCC, Amish watch repair, and the Los Angeles (CA) County Archives. I found various related artifacts such as newspaper articles, birth/death certificates, and marriage/divorce decrees but never located Jimmy Smith. I began to mentally prepare that the clocks might be forever lost.

My search took a significant leap forward in August 2022. I was contacted online by a woman in Montana named Judy Allison. She had viewed a 2019 YouTube video of mine, in which I'd shared photos of my grandfather's collection and discussed my search efforts. It turns out that she is the stepdaughter of *the* Jimmy Smith. While clearing out her stepfather's home in 2021, she

Figure 4. (left to right) Judy Allison (of Montana), Jimmy Smith, Judy Allison (of Florida), and Greg Allison.

Figure 5. Collection of Charles Allison timepieces I received from Charlie's step-granddaughter, Judy Allison. AUTHOR'S PHOTO.

Figure 6. Charles Allison with his W. D. Clement lathe.

uncovered 11 of the missing clocks in a closet! Each was carefully wrapped in cloth. Many of them bore the name "Allison" on their face.

Her stepfather had told her to throw away all of the contents in the house, but she was savvy enough to recognize these clocks as something unique. From her home in Montana, over 2,000 miles away from me, she began her own search to locate Charlie's East Coast offspring. Fortune (and a Google result) finally brought us together (Figure 4).

Figure 7. The missing Allison Mystery Clock, on display at Allison Watchmakers, 22851 Ventura Blvd., Woodland Hills, CA, ca. 1953.

As I quickly learned, my newly discovered step-cousin is unfailingly generous—she offered the entire Allison collection to my family so that, in her words, "the clocks could find their home." I made quick arrangements with my sister (also named Judy Allison) to drive from New York to Montana. Just 12 days later, my grandfather's collection returned to Rochester, NY (Figure 5).

The treasure trove from my step-cousin also included photos and papers. An Amish watchmaker friend, Mahlon Shetler, was particularly interested in a photo of Charlie with his lathe (Figure 6), which Mahlon identified as a W.D. Clement model. He believes this lathe enabled Charlie to craft creative and unique watch parts.

I am currently working with Mahlon to get each of these timepieces cleaned and in working order (several of them have started ticking on first wind). As my father related, it was my grandfather's desire to have this collection in a museum, so I am exploring options to make that happen. At the same time, I am writing a book about my search and its unexpected leap forward.

As the title of this article suggests, one of the 13 Allison timepieces remains lost. One of my grandfather's early creations was the Allison Mystery Clock (Figure 7), which operated with no visible works. Family lore recounts that Charlie conceived of the design in a dream and that he once turned down a Texas millionaire's blank check in exchange for it. As a small sign in his shop proclaimed, the Allison collection was "not for sale."

An undated and unattributed newspaper article (I suspect it may be from the *Van Nuys News and Valley Green Sheet*) given to me by my uncle shared the experience of a local journalist's visit to my grandfather's shop:

> This [Mystery Clock] is a wall clock with a two foot circle or dial, a wood skeleton. There is a suspension rod from the figure twelve to the center, which carrys [*sic*] the hands. The hands are of wood and revolve separately. Taking a yard stick, Charlie set the hands spinning at a good speed. When, again they assumed the sensible position, they had gained the minute or two that apparently was lost in the spinning. . . . These hands can be set wrongly or tipped to a different position but the clock always corrects itself.

Reading through more than 700 signatures in my grandfather's shop guest book, I have come to appreciate how many people admired both his Mystery Clock and his craftsmanship. Given my recent good fortune, I'm inspired to continue my efforts to locate this unique timepiece and try to learn what makes it tick. The quest continues!

If you have information about Charlie Allison, watchmaker, or any clues about the missing Allison Mystery Clock, please contact me at GREALLROC@gmail.com.

The Charles Allison Timepiece Collection will be on display in the Crafts Competition room at the 2023 NAWCC National Convention in Lancaster, PA.

Inside Charlie Allison (One Watchmaker's Observations)

BY MAHLON SHETLER (NY)

Having seen the entire collection disassembled and noted the fine finish or, in several cases, the slight lack thereof, I feel as though I have watched Charlie Allison work on these pieces from a distance. Some pieces are rather mundane, most are not, and several are very cleverly designed and built.

To understand these unique pieces, we may want to examine Charlie, the man. What drove him to make these pieces; in other words, why bother? We could say he did it because he could. That may be partly true, but I truly doubt that is the whole story. Granted, he was skilled to a high level. He apparently had some means and, according to a photo of him in his studio, he used a Clement lathe.

I am going to guess that part of the reason he built these pieces was that he was willing enough to show the world his watchmaking prowess. Then, as he completed one, maybe even before, ideas for the next one presented themselves and, in the process, he kept improving. Once started, this progress gained momentum and kept feeding itself. A sort of dopamine fix, if you will.

The fact that he made mystery clocks showed that he not only was willing to show his skills as a watchmaker, he was also willing to show that he could outsmart the smart.

Stress will do funny things to people. It will drive some to depression. Others attempt to rise above it, usually successfully. In the midst of a contentious divorce, Charlie chose to rise above it, and I believe he was, in part at least, quite successful. He got lost in clockmaking.

Charlie incorporated several design features in a few of his pieces that could have been unique at that time. One outstanding design is the mini-grandfather clock. I have seen several attempts at making a pendulum swing, but nothing I have ever seen comes close in performance to Charlie's. This is not to say Charlie did not copy the idea but, let us remember, it was the era of World War II. There were many fewer books, many fewer clocks, and certainly no Internet.

My exposure in the grand scheme of things is pretty limited but, chances are, considering that there have been another 80 years since, could my access to timepieces and books possibly match Charlie's? My guess is that Charlie was capable of inventing as he went, based on my observations of all the timepieces, including those where he made minor mistakes and covered them well. In this case, mistakes meant that he built the piece with a picture of it in his mind and those design flaws that showed up were cured one at a time.

Charlie may have been reasonably good at math, drawing, and engineering, but I doubt he built from so-called professional blueprints. He knew his craft well. And . . . he knew he knew.

Who Was Adolph Block? What Did Adolph Block & Co. Sell?

BY ANDREW DERVAN, NAWCC SILVER STAR FELLOW (MI)

Figure 1.

Figure 2.

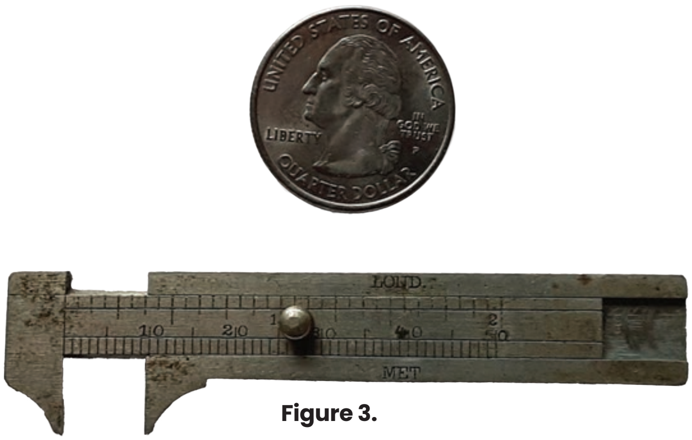


Figure 3.

At the September 2022 All-Michigan Meeting, I sat next to Stuart Saunders. He was selling a variety of horological items from his father who had passed away some time ago. One small item was a functional advertising miniature caliper that had "Compliments of Adolph Block & Co. Buffalo, NY" and "Gebr Ott Hanau Germany" stamped on the back. I ended up purchasing it and another small watch repair training device.

The miniature caliper (2¾" long and ½" wide) was nicely made and functions like a full-size caliper. Interestingly, it has two scales on the front: the top scale is labeled "Lond" for standard English (inches), and the bottom scale is labeled "met" for metric. It's amazing that they did this for an advertising item. The caliper was probably ordered from Gebr Ott, as it was stamped with his company's name on it. Figure 1 shows the front side of the caliper, Figure 2 illustrates the reverse with the company name stamped on the back, and Figure 3 shows the caliper's opened front side.

When I got home, I googled "Adolph Block Buffalo NY" and found nothing. However, googling "Gebr Ott Hanau Germany" returned "Gebrueder Ott GmbH" and indicated that the company made tools and cutlery and is located in Hanau, Germany, about 25 km east of Frankfurt Am Main. The company was founded in 1796 by Philip Adam Ott and was operated by succeeding generations of the family until 1959; the company is still in business today. I had another research project in progress, so I postponed any further research on Adolph Block.

Finally, I had the opportunity to spend some time at the local public library to research Adolph Block using Ancestry.com. I quickly located him: US Census (1910–1950), New York State Census (1915 and 1925), World War I Draft Registration (September 1918), and Buffalo City Directories (1896–1960), which provided a significant amount of information on Adolph Block and his business activities.

Adolph Block Bio

Adolph Block was born on September 10, 1875, in Thuringen, Germany, and immigrated to the US in 1890 and settled in Buffalo, NY. He married Bertha Jandorf on March 19, 1907, in Fremont, OH; she was born in Ohio on December 3, 1888. They had two children: a daughter, Carolyn, born in 1909, and a son, Norbert, born in 1912. Adolph passed away on May 13, 1969, at age 93, and Bertha passed away on April 4, 1972, at age 83. They were both buried in Forest Lawn Cemetery in Buffalo, NY.

The US Census listed his business activities:

- 1910—Jeweler
- 1920—Watch importer
- 1930—Diamond importer
- 1940—Mortgage collector
- 1950—Salesman/Wholesale jewelry (still working at age 75)

The New York State Census listed him as a manufacturer in 1915 and a diamond importer in 1925.

The World War I Draft Registration of September 12, 1918, recorded him as a "wholesale jeweler."

The Buffalo City Directories recorded him as follows:

- 1902–1917—Queen City Ring Mfg. Co.
- 1919–1931—Adolph Block & Co.
- 1934—No business listing
- 1941/42—Mortgage collector
- 1955/1960—No business listing (possibly retired as he would have been over 80 years old)

Adolph had an older brother, Joseph B. Block, who was born in 1873 and immigrated to the US in 1888, two years before Adolph. They were in business in 1898 as the Block Bros. as traveling salesmen. Joseph worked with Adolph from 1902 to 1917 with Queen City Ring Mfg. Co., based on information in the Buffalo City Directory listings. Apparently, they parted ways when Adolph created Adolph Block & Co. and Joseph was not listed with the company, but he was involved with several companies selling rings.

In 1924, Adolph obtained a US passport and traveled to Europe. He departed from Cherbourg, France, on July 4, 1924, on the ocean liner *Berengaria* and arrived in New York City on July 10, 1924. His trip was possibly for making business connections or purchasing items for the business.

This miniature caliper dates from 1919–1931 and was manufactured by Gebr Ott. Adolph probably used it as a customer giveaway. It appears that his wholesale company was importing jewelry-related items such as diamonds, watches, and rings. The 1929 Depression probably severely hurt his jewelry and diamond sales, so he was forced to close the company. Adolph later was collecting mortgages or possibly loan payments in the early 1940s and was a wholesale jewelry salesman in 1950. He was still working at age 75 in 1950.

It is a fascinating, functional advertising artifact that is almost 100 years old. How many other advertising pieces like this exist? I would be interested in hearing from NAWCC members with other unique advertising pieces.

Further Reading Related to "A DeLong-Type Escapement in a Vintage Timex Movement Invented by Georg F. W. Garbe?"

Regarding the RAN article in the January/February 2023 *Bulletin*, thanks are due to Michael Edidin for his suggestion that readers who wish for more technical information on the Garbe escapement and comparisons with the earlier DeLong escapement should refer to Michael Harrold's excellent article in the December 1997 *NAWCC Bulletin* (39, no. 311, pp. 660–81). Note that the Garbe escapement used in the 21-jewel Timex was much superior to DeLong's, which was only installed in a few hundred pocket watches during the 1920s (mainly Hamilton and Illinois) and was dropped due to its many problems. To quote Harrold, "What linger are thousands of Garbe's D-pallet watches [with the Timex 21-jewel movement] that still run (after oiling), and a strong suspicion that this was the escapement DeLong should have invented." Dr. Edidin has also suggested that readers might like to read Howard Price's article published in the August 1985 *Bulletin* (27, no. 237, pp. 421–23) that called attention to Timex 21-jewel watches.
—Ed Fasanella, RAN Editor

Research Activities & News (RAN) is currently accepting submissions. RAN submissions should be approximately 2,500 words in length, plus images. Contributors may send information directly to Ed Fasanella, RAN Editor, at edwinfasanella@gmail.com.

Vox Temporis

Bulova: An Iconic Brand and Intriguing Museum

After visiting Bulova's headquarters and museum on the 29th floor of the Empire State Building in New York City (Figure 1), I have come to realize that Joseph Bulova was an innovative entrepreneur who not only loved to invent and visualize the future but also was guided by a strong sense of ethics and values.

Bulova emigrated from Bohemia (today's Czech Republic) to New York in 1870. As a fully trained watchmaker, he landed a job at Tiffany & Co. but left five years later to open a small jewelry store on Maiden Lane in Lower Manhattan. By 1912, he had established a plant in Bienne, Switzerland, dedicated to the production of watch components and their assembly into jeweled movements; the movements were cased in New York City. Bulova was one of the first brands to recognize consumers' shift from pocket watches to wristwatches. Although he was driven by the values of quality before quantity and perfection before production, Bulova was an early pioneer of mass production to fulfill his vision of putting an affordable watch on every wrist in the United States.

By 1927, Bulova Watch Co., Inc., moved to 580 Fifth Ave., complete with the Bulova Observatory on the roof—the first observatory ever built on the top of a skyscraper. The Bulova School of Watchmaking was established in 1946 and operated until 1993. In 1948, Bulova developed the phototimer, which combined a photo-finish camera with an electronic timing mechanism. The unprecedented Accutron 214 electronic watch was introduced in 1960 (Figure 2), and in 1970, the company unveiled the 666 Devil Diver. Bulova is associated with so many firsts in the industry, including what many believe to be the first radio clock in 1928, the first Dust-Tight Protector (patented on June 10, 1924; it kept dust out of the watch movement), and promotion of the brand in the first nationally broadcast radio commercial (1926) and the first television commercial (1941).

Joseph Bulova understood the importance of promoting his products by associating watches with celebrities of the era, like pioneer aviator Charles Lindbergh, Olympic swimmer and *Tarzan* actor Johnny Weissmuller, and General of the Army Omar Bradley. Bulova was no stranger to pop culture,

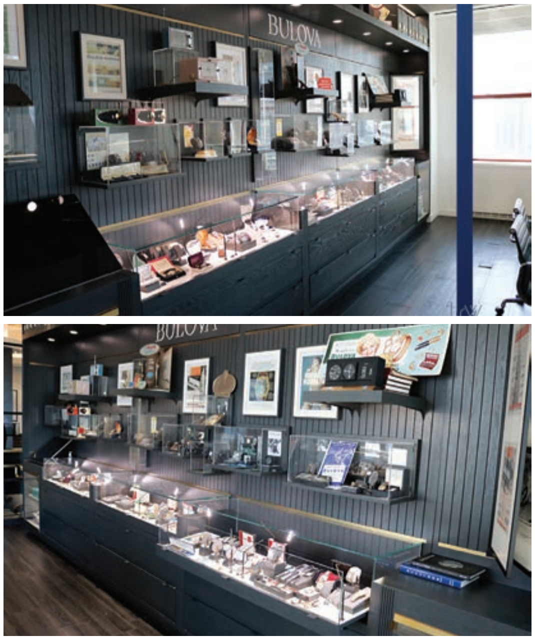


Figure 1. Bulova's museum preserves artifacts of this iconic company. AUTHOR'S PHOTOS.

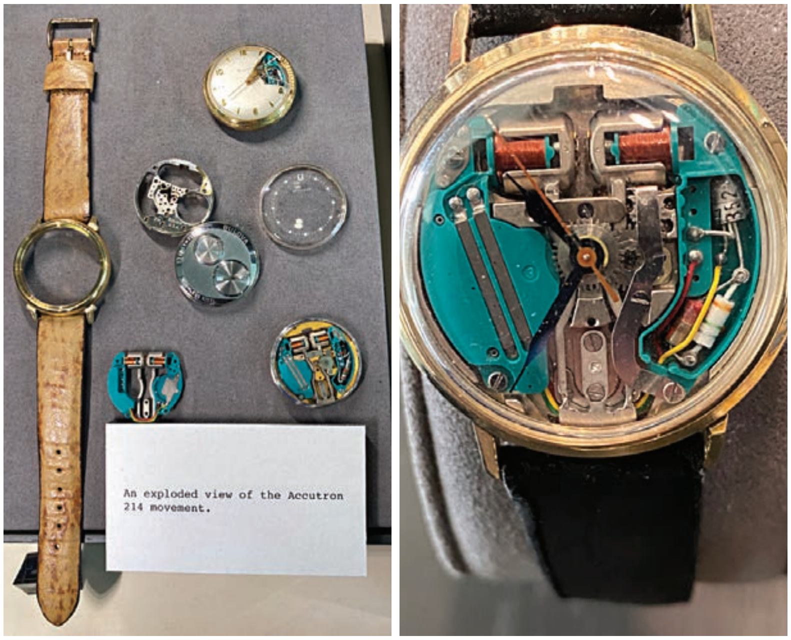


Figure 2. Accutron displays in the Bulova museum. AUTHOR'S PHOTOS.

having placed promotional banners at the first Beatles concert in the US. *The Frank Sinatra Show* variety television program that ran in the early 1950s was also known as *Bulova Watch Time*, since Bulova sponsored the program.

The Bulova company was also involved with NASA (46 space missions), and the US Air Force purchased an Accutron Astronaut for every pilot in the X-15 project, which ran from the late 1950s until the late 1960s. More recently, astronaut Dave Scott's Bulova, which he wore on the moon, sold for $1.3 million at RR Auction.

The Citizen–Bulova relationship dates back to 1960, when Citizen became a movement supplier and also a marketing agent for Bulova in Japan; Citizen acquired Bulova in 2008. In 2016, Jeffrey Cohen, CEO of Citizen Watch America, contacted Carl Rosen, a trained engineer and the former COO of Bulova, and archivist Julie Loftus. Cohen proposed creating a Bulova archive, complete with vintage watches, ads, memorabilia, sketches, designs, patents, marketing materials, and other ephemera. Not only will the archive keep the Bulova brand alive for future generations, but it also has plenty of material to inspire reissues or modern interpretations of vintage Bulova classics.

Bulova's museum shows the history and evolution of this important watch brand. I was amazed to see unique and iconic pieces like one of the oldest Bulova watches with an open back as well as a watch that once belonged to Elvis Presley (Figure 3). Looking at the packages, names of the watch lines, and advertisements in the museum, you can see the history of the US unfolding in front of you.

If you have the opportunity to visit the Bulova museum, I highly encourage it! Carl Rosen is the encyclopedia of Bulova, and he shared a plethora of interesting anecdotes and charming stories when I visited with him. Note that access to the Bulova museum is by appointment only.

If you want to learn more about the fascinating history of Bulova, I recommend two beautiful books published by the brand: *Bulova: A History of Firsts* (available from the NAWCC Library & Research Center) and *Bulova: A Legacy of Innovation*. Historical information is also available at www.bulova.com/us/en/collection/explore-history/.

—Laurent Martinez (CT)

Figure 3. Elvis Presley's Bulova Accutron 521. AUTHOR'S PHOTO.

Where Are the Young People?

During 42 years of being an active and involved NAWCC member, I continually have heard the lament, "Where are the young people?" as we pondered our shrinking and aging membership.

The answer is simple: There are millions of young people out there, but we have to find, educate, recruit, and encourage them. They will not find us, any more than I found the NAWCC in 1980 as a 28-year-old before a generous and caring older member took the time to guide me into horology and NAWCC membership.

I can relate three examples from the past few months when I practiced what I preach.

As the chairman of the recent NAWCC Time Symposium "Horology's Great Collectors," I waived the event's registration fees for two young women I had actively recruited to attend. One was a young curator at the Smithsonian who was recommended to me by a senior curator there, Carlene Stephens. The other was a museum-studies student in Cooperstown, NY, whose clock-related project I learned of through the Decorative Arts Trust. Both women attended the entire Symposium and told me how important it had been to them.

A good friend at Gordon College here in Massachusetts introduced me to his colleague who teaches museum studies. I offered to present a lecture (free of charge) to one of his classes on the subject of "Horology in Museums," with nearly 100 images and several show-and-tell objects (Figure 1). The 18 students clearly enjoyed the presentation, and I believe that some of them may accept my offer to intern in my workshop. Each student was given an envelope with related materials and a copy of our *Bulletin*.

Jakob Diepenbrock, a freshman at Northeastern University in Boston, contacted me because he's interested in watches and had heard about the Time Symposium. At my invitation, he stopped by my house for a visit one afternoon, and I invited him to come with me to a clock and watch auction at Schmitt Horan & Co. in New Hampshire. Jakob did come, and for several hours he listened, chatted, and even bid on a Rolex (Figure 2) while I introduced him to everybody I could. Jakob plans to attend more auctions and visit my home again to learn more about collecting and repairing.

While the NAWCC can offer free student memberships, free mart and Convention admissions, etc., these passive strategies mostly will be ineffective. Busy young people have so many opportunities and interests competing for their time that the odds of them finding and engaging with horology on their own are next to zero. One-on-one connection is crucial. Even if our social media posts are noticed for a few seconds, they will be forgotten just as quickly.

I hope that this will inspire other members to *find* the young people, and then do everything possible to get them engaged. And if any of you are already doing this, please share your success stories!

—Bob Frishman, NAWCC Silver Star Fellow (MA)

Figure 1. The author introducing Gordon College museum-studies students to horology. PHOTO BY DAMON DI MAURO.

Figure 2. Northeastern University freshman Jakob Diepenbrock experiences the perfect fit of a vintage Rolex at a Schmitt Horan & Co. auction. He was outbid but not discouraged. AUTHOR'S PHOTO.

A Shepherd's Final Tick

When it comes
And if I'm sane
I want to meet it like a shepherd
Who's fed his flock

Faithfully
Through trials that seasons bring
Who's loved as best he could
And has been loved

But if time should change all that
(As time will do)
By taking him last among his kin
Like a log in a somber

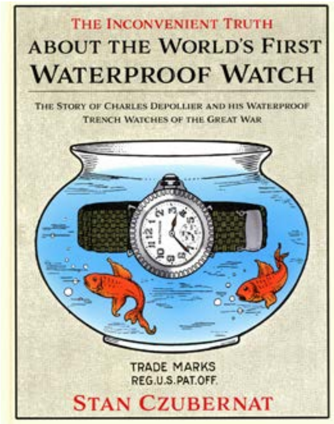
Moonlit meadow
Let it be memories
Glistening memories
A smile across his face

© Raymond Comeau, July 2022

Here is a poem about time that has philosophical/theological implications. It offers one perspective (among many possible perspectives) of the critical moment when the time that we know changes to non-time, or death. Ray Comeau is a former dean (retired) and current lecturer in Harvard University Extension School, where he teaches courses on the intersection of literature with philosophy and management. He is a member of NAWCC Chapters 8 and 87 in his native Massachusetts. His email is comeau@fas.harvard.edu.

Horologica

The Inconvenient Truth about the World's First Waterproof Watch: The Story of Charles Depollier and His Waterproof Trench Watches of the Great War



This is Stan Czubernat's third book on trench watches of World War I. After reading the preface, the meaning of the title's words *inconvenient truth* becomes apparent. The author's extensive research of original documents, advertisements, and patents leads to his conclusion that Depollier's waterproof trench watch predated by eight years the 1926 Rolex Oyster as the first waterproof wristwatch.

This is a must-read for military watch collectors and for wristwatch collectors who want to learn about the early history of wristwatch adaptation. The book's large trim size with high-gloss paper allows excellent depictions of pictures and original documents. Although the book is lengthy at 341 pages, it is a pleasant and engaging reading experience. Much of it is filled with large illustrations of patents, trench watch pictures from various collections, advertisements, and copies of research materials. World War I is credited with the beginning of the end of the reign of pocket watches. The combination of their wartime usefulness and the testimonials of famous early aviators made watches strapped to the wrist acceptable to men.

Czubernat credits the accessibility of content on the internet with allowing him to efficiently conduct his research of Depollier trench watches, especially the waterproof military version. (Note that today the term *waterproof* is no longer used, being replaced by *water resistant*.)

In Chapter 1, Czubernat introduces us to the Dubois Watch Case Co. located at 316 Herkimer St., Brooklyn, NY, that was founded in 1877. According to Charles J. Depollier, Depollier & Son was the sales division of the Dubois Watch Case Co. Depollier took over the business of Depollier & Son in 1914 after the death of his father. Shortly afterward, he began to develop military-style trench watch cases that exclusively housed Waltham Watch Co. movements.

The book includes various stem/crown and case designs that the company created during its development of the Field and Marine as well as THERMO waterproof watches. There were four different case designs considered, developed, and patented by Mortimer Golden, Charles Dunham, James Tough, and Charles Depollier himself. The army was very much involved in the designs and rejected the early contender, the Mortimer Golden waterproof design, due to its uncomfortable crown. The next version of the THERMO shown in advertisements featured Depollier's crown design. These waterproof cases had screw backs and bezels, as well as another Depollier innovation: a special two-prong key that fit into the two grooves in the bezel and back of the case that provided the leverage to securely screw them tight.

Unfortunately, there was a 1919 court battle between Golden and Depollier over the crown design, with Golden declaring that Depollier had stolen some of his ideas. The courtroom testimony is reprinted from original documents in Chapter 10 and makes fascinating reading. Chapters 11 and 12 feature the original patents presented as evidence in the case, which was eventually decided against Golden.

In Chapter 15, a booklet titled *The Watch in the Trenches* by Charles Depollier is reproduced page-for-page, and in Chapters 16 and 17, Depollier catalogs and photos are shown, including the pre-Khaki watch, the Khaki watch, and the Utility watch that were not waterproof. Although most of those watches are more commonly collected today than the waterproof Field and Marine, they remain very desirable. Also included are pictures of some rare varieties such as the Khaki Barrel trench watch, of which only three seem to have survived. According to the author, only one THERMO waterproof watch is known to date, which the author owns. Thus, collectors have more oddities and rare watches to seek!

Charles Leon Depollier, the inventor of the fully hermetic screw-down case, the waterproof stem and crown, the case key, the waterproof crystal, and spring bars, passed away at 70 years old on December 29, 1940, not long before the United States would enter another world war.

The Inconvenient Truth about the World's First Waterproof Watch: The Story of Charles Depollier and His Waterproof Trench Watches of the Great War, by Stan Czubernat, 2022, 341 pages, more than 500 images, 8.8" × 11.25", hardcover. ISBN 978-0-578-29133-8. Available from LRFAntiqueWatches.com, Amazon, and Ebay, $79.99.

—Ed Fasanella, NAWCC Fellow (VA)

Directory from Down Under

Compiled by Tasmanian horologist and NAWCC member Graham Mulligan, in collaboration with researcher and historian Sallie Mulligan, Hands of Time (www.handsoftime.com.au) is a comprehensive directory of clockmakers and watchmakers in lutruwita / Tasmania. The project compiles detailed historical information about more than 600 Tasmanian clockmakers and watchmakers. Information has been sourced over 30 years from books, industry journals and directories, websites, newspapers, Clockwise archives, Tasmanian Archives, the Founders and Survivors project, Watch and Clockmakers of Australia, descendants, and business contacts. Included in the project are some associated trades and retailers, convicts who identified as clockmakers and watchmakers but did not necessarily work in their field in lutruwita / Tasmania, and widows who continued running family businesses. Hands of Time is the most extensive resource publicly available on the history of clockmakers and watchmakers in lutruwita / Tasmania.

Established by Graham and Sallie Mulligan in Launceston on December 14, 1992, Clockwise has been a long-standing member of the Tasmanian business community for 30 years. During this time, Graham and Sallie spent countless hours researching and collating information for this project. As part of Clockwise's 30th birthday in 2022, Hands of Time has been released as a free web directory, fulfilling Graham's dream of wanting to provide this information to the community.

Hands of Time will be updated as new information is acquired. New facts, feedback, or suggestions are welcome at handsoftime@clockwisetas.com.au.

—Graham and Sallie Mulligan (AUS)

Sallie and Graham with an Ansonia drop-dial 8-day, time-only oak wall clock, ca. 1900s, retailed by watchmaker and jeweler Richard Darcey. PHOTO COURTESY *THE MERCURY* (HOBART, TASMANIA), ALEX TREACY, DECEMBER 28, 2022.

2022 Award Recipients

National Association of Watch & Clock Collectors, Inc.

Kenneth D. Roberts – Snowden Taylor Horological Research Award

This award is for excellence in the field of horological research and will be awarded annually if a candidate is recommended by the Awards Committee. A plaque will be presented to the recipient at the National Convention. Nominations for this award must be in the hands of the Awards Committee by May 31 preceding the National Convention.

Mary Jane Dapkus (CT)

Mary Jane earned a Master of Science degree from the University of Connecticut, and her thesis described an important but little-studied area of Connecticut clockmaking: "Middletown and Berlin, Connecticut: Wooden Movement Shelf Clockmakers: An Interpretive History." This thesis, as with most of her publications, provided much new insight and information and is considered required reading for those with an interest in the early wooden clock industry.

She has published more than 40 articles in the NAWCC's *Watch & Clock Bulletin*. Mary Jane also worked closely with Snowden Taylor in publishing the *Bulletin*'s Research Activities & News column during his tenure as chairman.

Most recently, Mary Jane has published a book on clockmaker Joseph Ives. *Joseph Ives and the Looking Glass Clock: A True Story of Risk and Reward in America's Age of Invention* is based on heretofore unknown court records describing Ives's clockmaking activities between 1818 and 1825, during which time he manufactured his signature mirror clocks. While Ives has been the subject of previous serious publications, Mary Jane's newest book contains essentially all new information.

Mary Jane also co-authored (with Snowden Taylor) a history of the Farmington, CT, clockmaking industry: *Antebellum Shelf Clock Making in Farmington and Unionville Villages*.

Mary Jane promotes the field through her participation with Cog Counters Chapter 194, and she actively participates and regularly submits substantive manuscripts for publication in the Chapter's journal.

Silver Star Fellow Award

This award recognizes exceptional and meritorious achievement and service in support of the NAWCC and its purposes. It may be awarded only to members who have already achieved Fellow Award status and is presented to the recipient at the National Convention.

Brooks Coleman Jr. (GA)

Brooks has continued his valuable contribution to the NAWCC by not only being a contributing member of Atlanta Chapter 24 but also serving as its treasurer in recent years. He has promoted NAWCC activities and been instrumental in arranging for and restoring an E. Howard astronomical regulator that is on prominent display in the Georgia governor's mansion. He also arranged for this clock to be on display at the 2015 National Convention. His auctioneering skills are most appreciated, and he has been the auction chair of the Mid-South Regional and served as auctioneer at that venue as well as at the National Conventions in Chattanooga in 2007 and 2015.

Tom Engle (KY)

Tom received his Fellow Award in 1991 and continued to publish, until 2018, the *Complete Price Guide to Watches*, which was and to some degree still is the standard reference for pocket watch and wristwatch pricing and identification. The guide has benefitted the public and the NAWCC membership alike. As a result, the guide has brought many new members into the NAWCC fold.

Clint B. Geller (PA)

A member for 38 years, Clint has continued to contribute to the NAWCC in many ways since receiving the Fellow Award in 2003. He is a member of Allegheny Chapter 37 and was a member of the former Pocket Horology Chapter 174. Clint served as president of Chapter 174 from 2003–2010. In addition to serving on the Museum Collections Committee of the NAWCC for the past 20 years, he served as chair of the Ward Francillon Time Symposium when it was held in Cleveland. Clint generously shared his knowledge by making presentations at the Lexington Regional in 2017 and 2018. He has written over 50 articles for the *Watch & Clock Bulletin* and authored the Special Supplement no. 5 of the *Bulletin* in 2005. Clint's achievements include being a recipient of the James W. Gibbs Literary Award for excellence in horological literature in 2009. His knowledge of Civil War timepieces was valued by the NAWCC when he was the curator of the Civil War watch exhibit in 2019–2020.

Christopher Martin (GA)

Chris, a member of Atlanta Chapter 24, has been a very active member at the Regional and National levels. He has served on the National Convention Committee and has assisted in the update of the Meeting Guides for Regional and National Conventions. He has been the program chair for the Mid-South Regional and has been vice-chair of education as well. He served as the exhibit chair for the 2022 Mid-South Regional and is co-chair of the 2024 National Convention to be held in Chattanooga, TN. He has compiled a written history of the clocks that Chapter 24 has restored in the State of Georgia.

Kent Singer (PA)

Kent has been a long-time member of Atlanta Chapter 24 until his health prevented him from attending meetings. He has served on the NAWCC Publications Advisory Board, the Speaker's Bureau, and the National Convention Committee since receiving his Fellow Award in 2005. He and Ed Ueberall wrote their *Bulletin* column, The Railroader's Corner, until 2008. He, like Ed, has made several authoritative responses in the Answer Box column in the *Bulletin*. Kent made a great contribution to the success of the 2015 NAWCC National Convention through his work on the exhibit. He has been very active by sharing his knowledge on the NAWCC Forums and at Regionals.

Edward B. Ueberall (GA)

Along with Kent Singer, Ed was actively involved in the exhibits at the National Conventions held in Chattanooga in 2007 and again in 2015. They continued their noted column, The Railroader's Corner, in the *Bulletin* until 2008. Ed and Kent held an evaluation workshop at the Mid-South Regionals from 2012 to 2014. In addition, Ed has shared his expert knowledge with responses to queries in The Answer Box column in the *Bulletin*.

Russ Youngs (TN)

After receiving his Fellow Award in 2015, Russ continued to make extensive contributions to the NAWCC. He has served three terms as president of Tennessee Valley Chapter 42 and served as registration or pre-registration chair for the Mid-South Regional for several years. Russ was the pre-registration chair for the Dayton National Convention in 2022. Not only has the Mid-South Regional depended on him for its pre-registration but the Southern Ohio Regional has as well. Russ has made several presentations to Chapter 42 on the topic of skeleton clocks.

Fellow Award

This award recognizes exceptional and meritorious achievement and service in support of the NAWCC and its purposes. It is administered by the Awards Committee and is given at a Regional or the National Convention.

Ben Bowen (FL)

Ben has been an active member of Big Bend Timekeepers Chapter 176 since its founding in 1998 and has served as treasurer of the Chapter during that entire time except for two years when he was president. He has also served as treasurer for three Mid-Winter Regionals. He is a skilled clock repairer who has given freely his extensive advice on how to solve horological problems. Ben has trained five apprentices, the most recent one becoming an NAWCC member.

James B. DuBois (TX)

Jim is a member of Tower and Street Clock Chapter 134, San Jacinto Chapter 139, and Cog Counters Chapter 194. In addition to his presentations to

Chapters 134 and 139, he was a speaker at the All-Texas Chapters Regionals in 2014, 2017, and 2021 and was a speaker at the Southern Ohio Regional in 2016 and 2022. Jim served as mart co-chair for the 1984 National Convention. For the 2017 National Convention, Jim was instrumental in arranging packaging, shipping, and setup for more than 35 clocks used in the display. He has written several *Bulletin* articles and has self-published a book on Joseph Ives. As an author, he has written extensively for *The Cog Counter's Journal* of Chapter 194. Jim has been a frequent contributor to the NAWCC Forums and is acting as a consultant to Chapter 139 on the restoration of the E. Howard tower clock in Galveston, TX.

Mike Granderson (TX)

Mike has served Lone Star Chapter 124 as a Board member, educational director, and head of security. At the Regional and National levels, Mike has been responsible for the exhibits at several Conventions. He has assisted past members and their families with disposing of their collections through innovative means at mart tables at Regional Conventions as well as Regional auctions. Mike assisted in the restoration projects that Chapter 124 has undertaken.

Randy Jaye (FL)

Randy is a member of Daytona Beach Chapter 154, Florida Suntime Chapter 19, and Jean Ribault Chapter 68. He has taken an active leadership role in Chapter 154, serving as vice president for two years and president, a position he held for the last 15 years. In addition, Randy has served as general chair of the Florida Mid-Winter Regional for several years. He has made many presentations to several Chapters as well as at Regionals. The NAWCC has benefitted from Randy's extensive research in his published articles, particularly the four-part series in the *Bulletin* on the progression of the wristwatch. Randy has further contributed several online programs to the NAWCC.

H. "Glen" Kitts (TN)

Glen has served as vice president of Tennessee Valley Chapter 42 and is a member of Atlanta Chapter 24. He has shared his knowledge and enthusiasm for railway timekeeping in presentations to both Chapters on several occasions. In addition, he has made presentations on the topic to Western Carolinas Chapter 126. He has participated in the Mid-South Regional for many years and acted as its security chair. Through his affiliation with the Tennessee Valley Railroad Museum, Glen arranged for the steam train excursion at the 2015 National Convention. At the same Convention, acting as display co-chair, Glen prepared a large display of clocks, watches, and railroadiana. He authored a book on the railroad time service.

Sherry Kitts (TN)

Sherry is a member of Tennessee Valley Chapter 42 and Atlanta Chapter 24. She has been active in both Chapters and made several presentations to each. She has served in many capacities at the Regional level, including acting as the mart chair and publicity chair. In 2015, she acted as co-chair of the exhibit. Sherry was elected to the National Board of Directors of the NAWCC and is the current secretary. She and her husband set up a display on railroad time service in 2017 at the Tennessee Valley Railroad Museum, where they prominently displayed NAWCC materials to attract membership.

Geoffrey Parker (TN)

Geoff is a member of Tennessee Valley Chapter 42, Atlanta Chapter 24, Lone Star Chapter 124, and San Jacinto Chapter 139. His involvement in these Chapters has included serving as treasurer and director. He has also served as finance chair, treasurer, and pre-registration chair for the All-Texas Regional. Geoff is a recognized authority on watches, and he has willingly shared his expertise as a speaker at both the Chapter and Regional levels. Geoff's knowledge of technology has advanced the record keeping of Chapter 139, and his commitment to the Chapter was instrumental in enabling the Chapter to obtain 501c(3) status.

R. O. "Bob" Schmitt (AZ)

Bob is a life member of the NAWCC with over 50 years of membership. He has been a member of many Chapters and is currently a member of Keywinders of Arizona Chapter 46, Los Angeles Chapter 56, and Valley of the Sun Chapter 112. Many NAWCC members know Bob through his auction services. He has donated his expertise and services at many NAWCC meetings at no charge. He acted as Regional Chairman for the Sunshine Regional in 2019 and 2022. In the past he has served as a director and officer of various Chapters of which he has been a member. Bob is a recognized authority on skeleton clocks and has produced a webinar for the NAWCC on the topic as well as videos, which are available on the Internet about these clocks.

NAWCC Golden Circle Awards

An award to recognize the achievement of 50 years of continuous membership in the NAWCC is granted automatically, and recipients receive a certificate and a special membership pin.

Gerald Aaron (KS) • Corbitt Baker (TX) • C. E. Beacham III (OR) • Johnson Becker (FL) • C. A. Bielamowicz (TX) • Gary Blakeslee (MI) • Alan Block (PA) • Ben Bowen (FL) • Donald Brown (RI) • Robert Bulver (IA) • Lee Burgess (WA) • John Campbell Jr. (OH) • Lenard Kaufman (OK) • William Carney (ME) • John Casavechia (Canada) • Gerald Cauthen (GA) • Scott Chamberlin (NY) • Harold Cherry (NY) • A. Scott Childs (KS) • Peter Christensen (AZ) • James Christian III (OH) • Dorian Clair (CA) • Gordon Cook (WV) • Doug Cowan (OH) • Richard Cox (TX) • Robert Creech (NC) • John Crowley (CA) • Anthony D'Agostino (NJ) • Dennis Deaton (FL) • Jeffrey Drazen (MA) • Craig Duke (TX) • James Dutton (FL) • Paul Ernest (MI) • Norman Fasig (CA) • Terry Fillion (Canada) • Sam Flax (NY) • Bruce Gillman (NJ) • Howard Gitman (NY) • Steven Glazier (OH) • James Golden (MD) • Donald Goldstein (VA) • Peter Graham (MI) • Ronald Graham (AL) • Douglas Green (CA) • Howard Grossman (PA) • Gerald Grunsell (CT) • Robert Gunning (MD) • John Hadden (NC) • John Hall (IA) • Bob Hargesheimer (TX) • Ward Harris (MI) • William Henderson III (MI) • Richard Hickok (CA) • Thomas Hodulik (NV) • Rod Hollen (OH) • Stig Ingvarsson (MA) • Thomas Kiepert (FL) • John Koepke (CA) • James Kuperberg (CA) • John Lippold (OR) • Richard McDonnell (FL) • Tom McIntyre (MA) • John Merhar (PA) • Sam Miller (FL) • Hubert Miller (CA) • Reynold Moniak (IL) • Thomas Mostyn (MD) • Donald Muzyka (PA) • Umberto Nanni (NY) • Wallace Napier (TX) • William Oldfield (NY) • John Orban (OH) • C. Thomas Parker (PA) • William Payne (KY) • Robert Peischl (CA) • Orville Pettis (NJ) • Russell Pitts (CO) • James Ratledge (SC) • E. Allen Richardson (PA) • Paul Richmond (NC) • Charles Robertson Jr. (PA) • Ben Rose (MS) • Gregory Ruda (MI) • Michael Saunders (MA) • James Schonaerts (TX) • John Seeman (TN) • Robert Shans (TX) • W. Vance Shappley (TN) • Robert Sheff (FL) • Jay Shuman (PA) • David Smith (ME) • Robert Stangl (PA) • Henry Stegeman (NY) • Theodore Stiller (WI) • David Stillwell (GA) • Jerry Tastad (WY) • Edward Tatro (IL) • John Tennyck (WI) • Lawrence Thompson (NY) • William Von Der Lieth (CA) • Richard Wauson (CA) • Jonathan Weber (NH) • John Williams (TN) • Lester Wise (IN) • Carroll Wolfe (AR)

NAWCC 60-Year Awards

An award to recognize the achievement of 60 years of continuous membership in the NAWCC is granted automatically, and recipients receive a certificate.

Jon D. Carpenter (IN) • Gene S. Gully (IL) • Kenneth Hassink (OH) • John F. Jameson (VA) • William A. Klauer (MA) • Byron H. LeCates (PA) • Vincent G. Mack (MA) • Irving E. Roth (AZ) • Larry L. Vanice (MA) • Armand V. Vial (OR)

Regional Recognition

All-Texas Chapters

CHAPTER CITATION San Jacinto Chapter 139 • Southwestern Chapter 15 • Five State Collectors Chapter 80 • Lone Star Chapter 124 **REGIONAL APPRECIATION** Ken Arnold (TX) • Darrah Artzner (TX) • Avin Brownlee (TX) • Marcus Bush (TX) • Gregory Cook (TX) • Stephen Edloff (TX) • Tim Glanzman (TX) • Randy Hohlt (TX) • Joseph Kuechle (MI) • John Laney (TX) • Nita Mixon (TX) • Hilda Norris (TX) • Thomas Norris (TX) • Geoffrey Parker (TN) • Kyle Rogers (AR) • Gordon Shahin (TX) • Andy Staton (TX) • Jeff Zuspan (TX)

Eastern States

CHAPTER CITATION Central New York Chapter 55 • Western New York Chapter 13 • Toronto Chapter 33 **REGIONAL APPRECIATION** Dick Baker (NY) • Dorothy Baker (NY) • Chris Beattie (NY) • Tammy Beattie (NY) • Helen Boyce (NY) • Brenda Burgin (Canada) • Dennis Burgin (Canada) • Jim Burghart (NY) • Karl Burghart Jr. (NY) • Mary Jane Dapkus (CT) • Stan Dapkus (CT) • Kathy Davis (PA) • Lee Davis (PA) • Phil DelPiano (PA) • Andrew Dervan (MI) • James Dutton (FL) • Dorothy Dwyer (NY) • William Dwyer (NY) • John Grabowski (NY) • Brian Gray • Ness Kuhn

• Virginia LaFond (PA) • Wilma Naylor (NY) • Janet Oechsle (NY) • Russ Oechsle (NY) • David Ornelas (Canada) • Ben Orszulak (Canada) • Monique Orszulak (Canada) • Carrie Pritzker (Canada) • Robert Pritzker (Canada) • David Richardson (NY) • Jonathan Rowe (NY) • Amedeo Sylvester (NY) • Maryann Sylvester (NY) • Doug Thompson • Frank Ziefel (NY)

Lone Star

GOLD Tim Brownlee (TX) • Pete Cronos (AR) • Brian Schmidt (TX) • William Slough (TX) **CHAPTER CITATION** Southwestern Chapter 15 • Five State Collectors Chapter 80 • Lone Star Chapter 124 • San Jacinto Chapter 139 **REGIONAL APPRECIATION** John Acker (TX) • James Barren (TX) • Mike Granderson (TX) • Gerald Greener (TX) • Debbie Hoganson (TX) • William Nash Jr. (TX) • Amy Slough (TX) • Cathy Slough (TX) • Evelyn Slough (TX) • Hugh Slough (TX) • Larry Thomas (TX) • Bruce Wooldridge (TX)

Mid-America

CHAPTER CITATION George E. Lee-Michiana Chapter 26 • Western Michigan Chapter 101 **REGIONAL APPRECIATION** Judy Clutter (IN) • Richard Clutter (IN) • Tom Diehl (IN) • Patrick Loftus (MI) • Donald Norris (FL) • Linda Riddlebarger (IN) • Terry Webb (IN)

Mid-South

CHAPTER CITATION Atlanta Chapter 24 • Dixie Chapter 16 • Tennessee Valley Chapter 42 • Alabama Chapter 54 • Rocket City Regulators Chapter 61 **REGIONAL APPRECIATION** Curtis Barnes (TN) • Dan Butt (GA) • Charles Carroll (GA) • Brooks Coleman Jr. (GA) • Denis Devane (AL) • Frances Geier (TN) • Robert Geier (TN) • Randy Grunwell (GA) • Keith Henley (TN) • Donald Jackson (GA) • Mary Jones (GA) • Donna Kalinkiewicz (AL) • H. Glen Kitts Jr. (TN) • Rick Letson (AL) • Bruce Lewis (AL) • Christopher Martin (GA) • Jae Martin (GA) • Geoffrey Parker (TN) • Dawn Thomas (TN) • Russ Youngs (TN)

North Coast

CHAPTER CITATION Lake Erie Chapter 28 • Ohio Valley Chapter 10 **REGIONAL APPRECIATION** Bryan Eyring (OH) • Bradley Howell (OH) • Julius Merkys (OH) • Jeffrey Ring (OH) • Ralph Zarnick (OH)

Pacific Northwest

CHAPTER CITATION Mt. Rainier Chapter 135 **REGIONAL APPRECIATION** Jack Goldberg (WA) • Jeff Grieff (WA) • Jeffrey Grossman (WA) • Ron Kowalski (WA) • Ernest Lopez (WA) • James Stewart Marinello (Canada) • Gary Myers (WA) • Steve Nelson (WA) • Leonard Noyes • John Runciman • Miguel Sherlock (WA) • Matt Zenski

Southern Ohio

CHAPTER CITATION Buckeye Chapter 23 • British Horology Chapter 159 **REGIONAL APPRECIATION** Craig Ankeney (OH) • Otto Argadine (OH) • M. James Arnett (OH) • Leroy Baker (WI) • Neighen Ball (OH) • Elaine Bullock • William Bullock (OH) • Michael Goodwin (OH) • Earl Harlamert (OH) • John Kirk • William Lusk (IN) • Scott MacKinnon (OH) • Jerry Maltz (NY) • David Miltenberger (OH) • Patti Moore (KY) • Joe Morgan (IN) • Rich Newman (IL) • Timothy Rawlings (OH) • Mary Thatcher (OH) • Carol Yegerlehner (OH)

National Recognition

CHAPTER CITATION Buckeye Chapter 23 • British Horology Chapter 159 **NATIONAL APPRECIATION** Craig Ankeney (OH) • Otto Argadine (OH) • Mike Bailey (NE) • Leroy Baker (WI) • Melanie Bernhardt • Daniel Bowers (OH) • Bob Burton (KY) • Jody Burton (KY) • Lee Davis (PA) • Bob Frishman (MA) • Michael Goodwin (OH) • Peggy Goodwin (OH) • David Gorrell (MD) • Christine Griffen (OR) • Fred Hansen (IL) • Earl Harlamert (OH) • Russell Hill (OH) • Cary Hurt (AL) • Lonnie Jamison (OH) • Roger Keys • Sherry Kitts (TN) • Chris Klingemier (OH) • Jane McIntyre (OH) • Tom McIntyre (OH) • Joe Morgan (IN) • Rich Newman (IL) • Bob Niemeyer (IN) • Tim Orr (CO) • Steve Petrucelli (NJ) • Philip Poniz (NJ) • Jim Price (KS) • Bob Pritzker (Canada) • Tim Rawlings (OH) • John Riddle (KY) • Rick Robinson (VA) • Ken Rockwell (FL) • Kyle Rogers (AR) • Lu Sadowski (NY) • Evelyn Slough (TX) • William Slough (TX) • Tyler St. Gelais (NH) • Mary Thatcher (OH) • Scott Trochelman (OH) • Russ Youngs (TN)

Donor of the Year

James T. Dutton (FL)

Chapter Donor of the Year

Florida Gold Coast Chapter 60

Business Partners of the Year

Brent Miller Jewelers

Jones & Horan Horological Auctions

In Memoriam

Chappell Jordan

Chappell Jordan, Old Timer member number 7130, passed away on November 15, 2022.

After graduation from college, Chappell moved to Austin, TX, to further his education at the Episcopal Theological Seminary of the Southwest. While there, in his spare time, he became interested in antiques, particularly antique clocks. The early 1960s were an exciting time to be in the antiques world, and outgoing Chappell enjoyed the mentorship offered by early Austin-area collectors.

The lure of the clocks was strong, and he and his wife, Mary Elizabeth, both Georgia natives, decided to open an antiques shop in Houston, TX (having never lived there) nor been to England (which was to be their source for inventory). After an initial, successful buying trip to England, the first container of goods was on its way. It was time to race home, go to Houston, and find a location for an antiques shop.

This may not have been the typical business model, as he didn't even have a shipping address for delivery of the container, but it forced him to find success—quickly.

Four times a year Chappell made the trek, bringing back container after container, a source for antiques enthusiasts in the south. The business grew and in 1975 the decision was made to do away with the general antiques and to become Houston's source for clocks, both new and antique.

With more inventory, more customers, and more employees, Chappell became a mentor like the ones he had looked up to those many years before. The business (Chappell Jordan Clock Galleries) continues to this day, in its third generation of ownership. Chappell's goal—strive for perfection and accept a little less—is still in place.

—Ralph Pokluda, NAWCC Silver Star Fellow (TX)

In Memory Of

We recognize here those individuals and Chapters whose gifts to the NAWCC were given in memory of fellow members.

Don Brown given by Peter A. Nunes

La Vena Coble given by Carolina Chapter 17

H. William Ellison given by Great Lakes Chapter 6

H. William Ellison given by Leroy Baker & Linda Leetch

George Hudson given by Free State Chapter 141

George Hudson given by Maryland Chapter 11

Cathy Koolen given by Leroy Baker & Linda Leetch

Paul Mallie given by Great Lakes Chapter 6

Jim Price given by Ozark Chapter 57

Jim Price given by Leroy Baker & Linda Leetch

Lu Sadowski given by Leroy Baker & Linda Leetch

James M. Tinsley Sr. given by Tinsley Foundation

In Honor Of

We recognize here those individuals and Chapters whose gifts to the NAWCC were given in honor of fellow members.

John Cote given by Amy Kennedy

Obituaries

Robert A. Benson
103102 Bolton, MA

Donald Brown
29479 North Kingstown, RI

George S. Hudson
7694 Sparks, MD

James L. Kinkaid
65898 Palmetto, FL

Robert Lang
136990 Cross River, NY

John T. Neal
13947 Colorado Springs, CO

James F. Woofter
178830 Canton, OH

In Memoriam articles for the *Watch & Clock Bulletin* are written to mark the passing of an NAWCC member. Submission guidelines are as follows:

- A maximum of 550 words submitted in a Word document (no PDFs). Including birth-death dates is recommended. Text will be edited for grammar, spelling, style, and word count.
- Images are optional, and there is typically a limit of one image. High-resolution images are preferred (a minimum of 300 dpi or 1,000 kb) and must be submitted as a separate JPG or TIF file. Do not embed the photo in the Word doc. Images of very low resolution/quality may be rejected.
- The author's name and state must be included.
- An In Memoriam will be printed in the next *Watch & Clock Bulletin*. Deadlines are the first of the month, 60 days prior to publication (e.g., the deadline for the March issue is January 1).
- Send Word docs and JPGs or TIFs to editor@nawcc.org.

NAWCC Committees

Publications Advisory and Review Board

NAWCC Dates to Remember

All Regional meetings must be scheduled through Convention Committee Coordinator John Koepke by emailing him at jskoepke@comcast.net, calling 510.236.2197, or mailing 2923 16th Street, San Pablo, CA 94806-2362.

For complete information about Regionals, the National Convention, and the NAWCC Ward Francillion Time Symposium, please see the *Mart & Highlights* or go to nawcc.org.

Photo by Gavin Ashworth

Mar/Apr 2023 (U.S. $13.95)

ISSN 2152-4858