August 2023

HOROLOGICAL TIMES™

AMERICAN WATCHMAKERS-CLOCKMAKERS INSTITUTE · SUPPORTING AND ADVANCING HOROLOGY THROUGH EDUCATION AND COOPERATION

New, Familiar Faces Elected to BOD



Creating a Six-Tooth Segment for a Tall Case Hour Wheel

Watch, Clock Scholarship Applications Open

Trademarks Mean Something

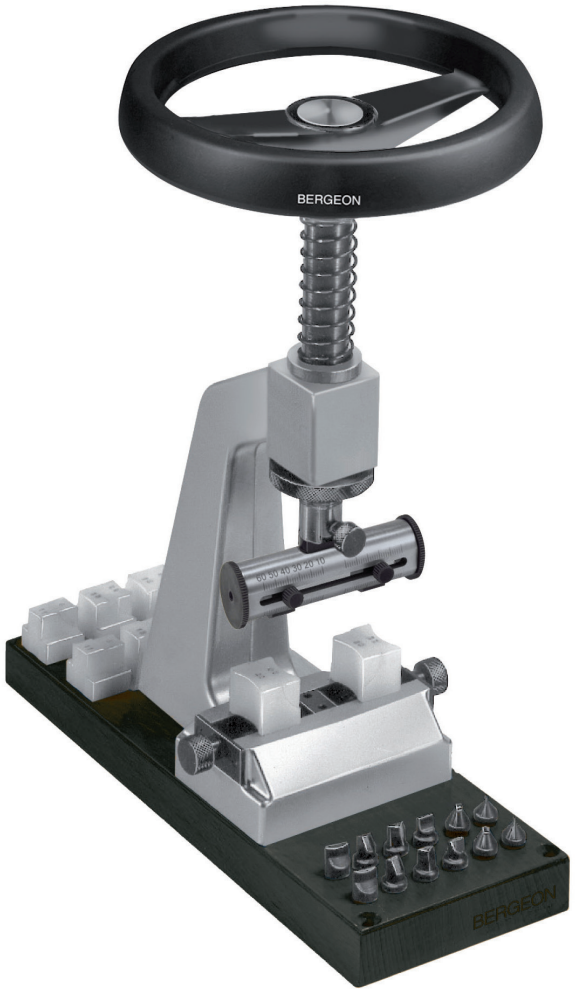
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BG5700Z

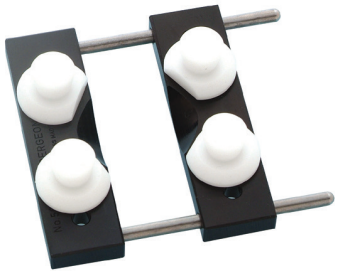
Device for opening & closing waterproof watch cases.
Made in Switzerland.



- Designed for big cases
- Opening up to 60 mm
- Stand measures: 250 x 95 mm

BG5674

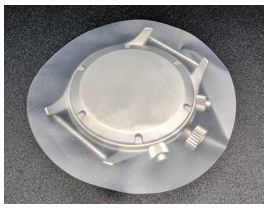
Optional case holder. Enables you to remove the case without removing the watch band. Made in Switzerland.



- Use with BG5700Z
- Can use with or w/o watch band attached

BG7982

Case protector films. This product is a must to avoid scratching the case. Sold in 60 & 85 mm diameters. Made in Switzerland.



BG7982-60/20

- Diameter: 60 mm
- Pack of 20 pieces

BG7982-85/20

- DIameter: 85 mm
- Pack of 20 pieces

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AWCI

IN THIS issue

VOLUME 47, NUMBER 8, August 2023

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The first of what will be a pair of precision pendulum clocks built by AWCI member Jacob Curtis of Staunton, Virginia. The clock was on display at the 2023 NAWCC National Convention in Lancaster, Pennsylvania. A feature on the building of the clock will be published in the September issue of *Horological Times*.

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From the Editor



It's amazing how sometimes, in the least expected places, an idea can be born.

That's how it was for me back at the beginning of July. A night out with my wife, simply to get dinner, ended up in the creation of a new feature for *Horological Times*, starting with this month's issue.

We took a little drive to Covington, Kentucky, a city situated right across the Ohio River from Cincinnati, Ohio, for a night of Indian food and perusing some vintage clothing and furniture stores along that city's main strip, Madison Avenue. It was a Saturday night, and after our dinner of chicken saag, vegetable samosas and garlic naan, we decided to join the throngs of folks on the street who were either shopping, eating at other establishments, or on their way to the sold-out Taylor Swift concert taking place that night on the other side of the river in Cincinnati.

It was on a sidewalk on Madison Avenue where our new feature, "A Vintage View," was born, once my eyes set upon a vintage neon sign jutting from a building touting "Rich's: Gruen Watches," which stood out like a glowing beacon and homage to watchmaking amongst the other signage and décor adorning the street's businesses. (See page 50.)

I had to take a photo—which I did—with my original plan to simply have a print made of the photo, frame it, and hang it up at my desk at work. But then, the wheels in my mind got to rotating, and I thought, why just limit this great picture to only myself?

Why not share it with readers of *Horological Times*, as well?

Then it got to be a question of how I would work it into the magazine, and maybe even expand on it and not have the photo be simply a one-off picture to take up a page in the HT.

It hit me—why not turn it into a recurring feature, come up with a name for it, and even offer to AWCI members and readers the chance to, on a monthly basis, submit their vintage photos of timepieces, signage, advertising, etc.?

For as much as folks in the horological world love to keep up to date on the new and cutting-edge tooling, methods, designs and such that come about in this trade, there is still a great respect and reverence for our horological past. In my opinion, it's a respect, reverence and adoration for the past that is only rivaled—at least here in the US—by the respect, reverence and adoration of the nation's military and its past, and the sport of baseball and its past.

Just look at the various horological organizations—AWCI, the National Association of Watch and Clock Collectors (NAWCC), the British Horological Institute and AWCI Affiliate Chapter the Horological Society of New York, for instance—who have libraries, displays and museums acknowledging the rich, complex and amazing history of horology.

In fact, in mentioning horology's past in the same breath as baseball's past, many baseball stadiums of yore—old Yankee Stadium in New York, Comiskey Park in Chicago, Crosley Field in Cincinnati, and Memorial Stadium in Baltimore among others—had vintage watch brand signage, such as Longines, Wittenauer, Elgin and Armitron, adorning their ballpark clocks. Some of you may even remember that signage, because you attended games in those very parks.

Meanwhile, others of you might have some vintage signage or advertising in your own shops, proudly displayed, that would be perfect for this feature. You may find yourself out and about in the wild—like I was—and come across some vintage horological advertising or signage that would be of interest, and snap a picture of it.

Or you've got that treasured vintage timepiece in your watchbox, or the hallway of your home, that you love showing off to guests, because you are so proud of it.

Well, here's your chance to show off that nostalgia with "A Vintage View." Feel free to email me your submissions at james@awci.com, and I'll be happy to look them over and publish them in future issues of the HT. Just make sure you include a brief history and backstory with your submission, much as I did with this month's debut.

I look forward to having some fun with this new feature, and I hope you do as well.

If it brings a smile to your face, or a fond memory, while we pay homage to one of the many awesome aspects of our horological past, then all the better!

James Sprague
AWCI's office manager
and managing editor
of the *Horological Times*

AWCI

OUR VISION:

AWCI's vision is to have an educated and passionate horological community practicing the highest standards and with the resources to provide quality goods and services.

OUR MISSION:

Supporting and Advancing Horology through Education and Cooperation.

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Check out our educational videos!
www.youtube.com/awci/videos

a message from the president

DAVID LINDOW

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David Lindow
david@plumier.org
570-229-1678

As I write this, the NAWCC National Convention is just wrapping up. It was so good to see a number of you there and have a chance to talk. Over and over again, I heard the same thing, "I love the direction I see AWCI going." Honestly, I think there are some really positive trends amongst horology in general. While we saw mostly older people, the younger were interspersed and, from what we saw, quite eager to learn the practical side of things.

It's obvious from a quick and casual observation that the crowd was predominantly older though, and diminishing in numbers. One can quickly let their mind go to bad places with these observations, or they can look deeper to see the good things that are happening. While we may not see large gatherings in major conventions centers as viable into the deep future, as show sales diminish and sales on online forums increase, we can see some things offer promise for the future. To be sure, there were some beautiful sights to be seen.

> "Horological education is not a zero-sum game! When one of our organizations wins, we all win. In fact, all of horology wins."

One of the things that really stood out to me was the cooperative attitude between organizations. While this was an NAWCC event, Stephen Franke and I spent two days doing demonstrations promoting the educational programs of both AWCI and NAWCC. Indeed, our literature was on the same table. We've been sharing teachers in the clock program for a while, but to see the level of cooperation deepen is heartening. In fact, we'll see the team of people that developed the Foundational Clock Repair Skills class that met at AWCI in 2021 meet next month at the NAWCC School of Horology to work on another class.

In addition to this, the NAWCC asked both HSNY and AWCI to help out with the education program at the meeting, and had programs going on next to each other. To see the NAWCC reach across the lines and invite other organizations to participate under their own auspices was extremely encouraging.

Horological education is not a zero-sum game! When one of our organizations wins, we all win. In fact, all of horology wins. If our organizations are going to move deep into the future, they must have a meaningful impact on the membership, and the best way to make that happen is for us all to cooperate in the areas we overlap each other and support our sister organizations in their endeavors where they do not. Seeing the cooperation between organizations begin to come to fruition delighted my soul more than I can say, and would have made the trip worth what it cost; however, there was much more to celebrate at this show.

Amongst the many I met, I met a few that really boosted my spirits.

As most of you know by now, I believe that we must be training young watchmakers to have deeper and deeper micro-machining skills, despite seeing that leave many of the programs. In the not-so-distant future there will simply not be parts available for many movements, as companies simply stop supporting particular movements. With the increase in watch sales, we're seeing it will become more and more important for us to have a training system that incorporates teaching the ability to manufacture parts. I met a number of younger people who are aspiring to this and moving in this direction, but I also met Denis Carignan, who has gone about making a wide array of parts as needed and is doing much in the area of part making and restoring. It's heartening enough to find someone that is carrying out such activities, but in addition Denis was free flowing with technical information and as such represented the arrival of an aura of cooperation amongst independent craftspeople. Emerging, if for just a moment, from what I call the "horological trenches" or "underground," he came out to establish relationships that straighten my learning curve as I move toward particular objectives I have. He seemed to understand inherently that we are not in competition, as it's not a zero-sum game, and that cooperation will advance us all. He shared not only knowledge but

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Letters to the Editor

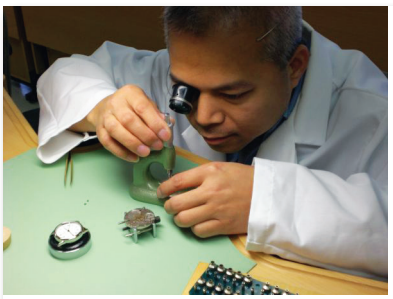
James,

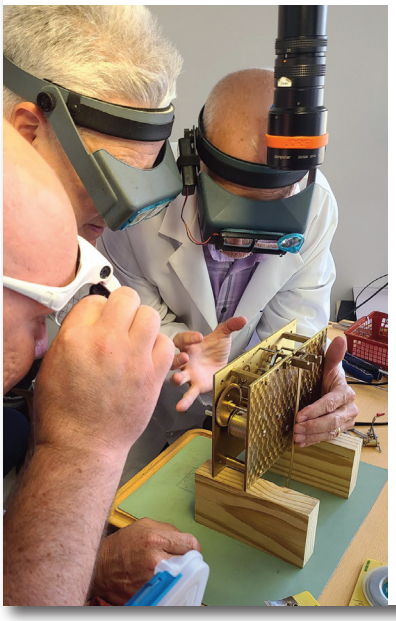
I wanted to mention that I have noticed the expansion of the HT in recent months.

Opening a new issue has been more exciting than before, as I have increased confidence that there will be an article which will catch my interest. Please keep up the good work.

I hope to attend the symposium this fall. Let me know if there is something I can offer on the educational front.

Sincerely,
Michael Gainey, CC21





Make sure your AWCI member profile is current!

AWCI has been receiving many calls from watch and clock owners across the country who are seeking AWCI horologists to repair or restore their beloved timepieces. Many are looking for horologists who work on specific brands, and we have been referring them to those horologists.

With this increased volume in calls, we want to remind AWCI members to make sure their member profile—the one listed in AWCI's professional directory, which we refer to when finding a recommendation for the callers—is up-to-date.

If you specialize in a certain brand of clock or watch, make sure it is listed in your member profile. You can update your member profile by logging into AWCI's website at https://awci.memberclicks.net/login#/login and clicking on "**My Profile**." At that point, you'll be able to edit your profile and add or delete anything you need!

Keeping your profile current is a great way to benefit from AWCI's Professional Directory, as we are averaging roughly 10 to 20 calls or emails a day from watch and clock owners seeking someone they can give their business to!

If you need assistance, don't hesitate to contact AWCI Office Manager James Sprague at 513-367-9800, ext. 301 or via email at james@awci.com.

AWCI educational calendar

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Check out AWCI's complete line of courses for watchmakers and clockmakers!

We invite you to browse our **course catalog**, **www.awci.com/course-catalog**, which offers a myriad of classes for watchmakers, including classes for beginners, technicians, and, of course, experienced watchmakers who want to sharpen their skills.

In the catalog, you'll find classes on:

- Introduction to Watchmaking
- Quartz
- Vintage Watch Repair
- Tool Making
- Precision Timing

We also have numerous classes for clockmakers, including classes on:

- American Time-and-Strike Movement
- Advanced Clock Repair
- Introduction to the Lathe

See our catalog for more!

We can use your help

We are always looking to expand our course catalog and educational resources as well as increase our team of instructors. We have been brainstorming on new courses to offer and searching for new instructors who will join forces with us. Your input is valuable. If there is a class you would like to collaborate on as an instructor, reach out to us at education@awci.com.

We look forward to receiving your requests and/or inputs!



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Reserve your spot today. Contact the education director, Jason Champion, CW21, at 866-FOR-AWCI (367-2924), ext. 303.

Prices reflect members' discount! For additional information and/or prerequisites, go to www.awci.com/classes. Contact us so we can help you find the best course suited to your skill level, expertise, and interests.

August 7–11

WATCH 240:

$1,095 members
$1,245 non-members

The Swiss Lever Escapement

SOLD OUT

Instructor: Jason Champion, CW21
AWCI Headquarters, Harrison, Ohio

Join us at AWCI headquarters for a 5-day course working on the lever escapement theoretically and practically. Fundamentals of the escapement, how to check and make adjustments will be covered. Lubrication and how adjustments will affect timing will also be covered in the class.

August 7–11

$1,629 members

Restoration and Wheel Cutting

Instructor: Henrik Korpela & Michael Lau
KHWCC, Le Locle, Switzerland

A class on gear cutting where an hour wheel will be machined using the Schaublin 70 lathe, including practical trials of making the essential parts of a going train wheel (such as the center wheel) with exercises including burnishing pinion pivots, and so much more! To register go to: **http://www.khwcc.ch/customized-restoration-course.html**.

August 21–25

WATCH 175:

$1,345 members
$1,495 non-members

Case and Bracelet Refinishing

SOLD OUT

Instructor: Jason Champion, CW21
AWCI Headquarters, Harrison, Ohio

Polishing a case today requires many skills. Complex case and bracelet designs are common in the marketplace. Standardized polishing methods were often not taught in watchmaking schools here in the US until recently. Many watchmakers learned polishing by trial and error by observing the procedures of others. Today's consumer has high expectations concerning the quality of the watch repair, which includes the refinishing of the case and bracelet.

September 6–8

$595 members/non-members

Watchmaking Theory

SOLD OUT

Instructor: Jason Champion, CW21
AWCI Headquarters, Harrison, Ohio

Join AWCI for this course which explains the inner workings of a watch; a must for anyone considering taking the CW21. It allows you to understand functional issues, as well as theoretical ones. Lubrication, isochronism, automatic systems, calendar systems, and more will be covered. Tests and answer reviews will be given at the end of each section. A great way to learn and practice theoretical test taking. No prerequisites for the class. Highly encouraged to own a copy of *The Theory of Horology*.

September 18–22

WATCH 330:

$1,095 members
$1,245 non-members

Precision Timing

Instructor: Jason Champion, CW21
AWCI Headquarters, Harrison, Ohio

This course covers most common causes of timing errors and methods of correcting them. Performing precision timing exercises, including staffing, static & dynamic poising. **Prerequisites:** Having a minimum of five (5) years in mechanical watch repair, or having participated in the AWCI Basic Watch Repair. Reading Chapter 7 of *The Theory of Horology* prior to attending the course is recommended.

September 23–24

CW21 Exam

AWCI Headquarters, Harrison, Ohio

Limited components will be offered at this time, but we are very excited to be back with our exam. Please review the documents and information at https://www.awci.com/event/cw21-3/.



September 28–30

$225 members, $100 plus ones

The AWCI 2023 Fall Symposium

AWCI Headquarters, Harrison, Ohio

Mark your calendars! The annual AWCI Fall Symposium returns September 28–30, 2023 at AWCI Headquarters! We want to see as many of you as we can fit in the building! We're actively working on the lectures and classes we will be offering during the event, so stay tuned for those details coming soon! Register now at https://awci.memberclicks.net/2023awcisymposium. Additional info, **back cover** of this issue.

October 16–20

WATCH 100:

$1,095 members
$1,245 non-members

Introduction to Watchmaking

SOLD OUT

Instructor: Jason Champion, CW21
AWCI Headquarters, Harrison, Ohio

A survey course for the new or prospective watchmaker covering the basic skills and techniques used by the modern watchmaker. This class is perfect for anyone thinking about entering the profession of watchmaking or for the individual who just wants to gain a better appreciation for the art of watchmaking.

October 23–27

WATCH 250:

$1,095 members
$1,245 non-members

The Essential Micromechanics—The Watchmakers Lathe I

Instructor: Jason Champion, CW21
AWCI Headquarters, Harrison, Ohio

The purpose of this course is to teach the student basic micromechanics skills and all the basics of operating a watchmaker's lathe. Emphasis on the Swiss watchmakers lathe and utilization of the hand graver are covered during this course. Graver sharpening and maintenance of the Swiss watchmakers lathe will also be covered.

October 23–27

WATCH 350:

$1,095 members
$1,245 non-members

Tool Making for Watchmakers and Clockmakers: The Watchmaker's Lathe II

Instructor: Jason Champion, CW21
AWCI Headquarters, Harrison, Ohio

This course is a continuation to Watchmaker's Lathe I and the purpose is to teach the student the necessary knowledge and hand-skills to manufacture various parts in steel that will be functional in a mechanical watch, e.g. the winding stem.

November 1–3

$695 members
$845 non-members

Foundational Clock Repair Skills

Instructors: AWCI Members Wayne Andrews and R.K. Elswick
AWCI Headquarters, Harrison, Ohio

This three-day class offers a basic understanding of the most fundamental operations involved in clock repair, restoration, and conservation. The class will cover basic lathe operations, burnishing/polishing pivots, re-pivoting, making and setting bushings from scratch, and the basic use of the depthing tool to check bushing work.

AWCI

For additional details about specific courses in comprehensive syllabi form, including complete tool lists, visit: www.awci.com/classes or contact the education director, Jason Champion, CW21, at 866-FOR-AWCI (367-2924), ext. 303. For additional calendar events visit: www.awci.com/calendar.

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Back in the Saddle Again

By Jason Champion, CW21

I am not sure if the saddle is the mobile classroom or the chair at the bench, but the last few months have been a bit of a blur. In March, I discussed the vision I have, from my seat, on where AWCI should have its sights. Since that time, there have been several individuals who have stepped up to help with instruction, both at headquarters as well as assisting on the mobile classroom. We have had several generous donations of equipment and manhours here at headquarters and in the classroom. Since the writing of the last article, we have had nine courses offered in the watch classroom, our first CW21 certification exam offered in three years, and I have just returned from a month of being on the road.



The AWCI Archie Perkins Mobile Horology Classroom in St. George, Utah, for the first Build a Watch course of 2023. It was one of the many stops made over the last few months, across the US, by AWCI Education Director Jason Champion.

We participated at JCK in Las Vegas. We made new contacts and renewed contacts which we have had from years past. We certainly appreciate the outstanding support from our IAB members, with donated materials which we presented on their behalf. The bench from BecoTechnic is always a big draw, as is the tooling we highlight from Jules Borel and our other supporters. We certainly hope that each of you has received contacts on behalf of this show, from everyone we showed them too, and they see value in how it can help their business.

A need for our profession is still very much in demand, as store owners came by requesting help locating a watchmaker and clockmaker. The use of our professional directory cannot be emphasized enough. If you have not visited your profile lately, you are missing a powerful resource. Think of someone looking for a watchmaker or clockmaker in any given town across the US. Ensuring you show up on a base search by zip code, or on a specific search for a specific timepiece, is worth the effort to give your profile an edit.

After pulling out of Nevada, two classes were taught in Utah. One in St. George, where I had the pleasure of working with Regal Watch Exchange. What a great store. I had the chance to experience three really special watches. You would have to make the stop to visit them to understand. If you haven't yet been by their shop, you certainly should. The course in Salt Lake City was held in partnership with the Horological Society of Utah and the Löwen Watch Group. What a generous and passionate group of watch advocates. The Löwen Watch Group opened up their parking lot and their facility for a Horological Society of Utah meeting, but most importantly they opened their hearts. I am always blown away to hear the history of companies. What a labor of love.



Gem City College horology chair Philip Stoller with his students outside the AWCI Archie Perkins Mobile Horology Classroom during a stop in Quincy, Illinois.

It was a great opportunity for our Build a Watch class, but an even better opportunity to meet with a lot of like-minded individuals from all walks of life. Much appreciation to those in all organizations across the US keeping the dream of Mr. Gribi, first president of AHS, alive. Much appreciation to Mr. Adams for helping with both classes in Utah.

After pulling out of Utah, I was able to meet with a couple of our colleagues in Omaha, Nebraska, at Borsheims. It was a quick visit, but I love to make stops by our partners when I can make it work as I travel across this great country. I certainly want to make more stops and say hello. Borsheims has a beautiful store, focused on bringing service to our watch community. On the way back across the US, a stop was made in Quincy, Illinois, to our previous AWCI Vice President Craig Stone and his wonderful shop and customers at the Illinois Watch Company. During this stop, I also made a trip to the Gem City College facility and worked with the students there on a water-resistance lesson. Philip Stoller has made major strides on the facility there, and I hope we can help him more on his path. During this time, the renovations in the clock workshop were put to use, and new audio/video technology and workshop upgrades in tooling and organization allowed for continued advances in our clockmaking education. Another great sold-out Foundational Clock Repair Skills class was held.

Each of these experiences let us work on each of the four areas that were mentioned in that March article—introduction classes, professional classes, foundational level classes and those who are in a watchmaking school. What a great way to recap our mission. In each of these instances, there were individuals on different paths seeking to advance their skills in our industry. I love the motto that the Chronometer Club adopted previously, "In the race for perfection, there is no finish line." A very true statement. When I receive CEU documentation and meet with individuals in all levels of watchmaking, it reinvigorates my commitment to our mission here at AWCI. I certainly appreciate all you have done for this organization. The desire to give more than is expected is a hallmark of AWCI's instruction and membership. I am grateful to be a part of this community and hope we can all continue to build upon those who have come before us, and for those who are yet to find this love of horology we all share. With the close of our yearly election, I hope we build on our participation from this year's election and engage more of our members to help us continue to build this organization for the future.

There is certainly more to do than James and I can cover. Your help is genuinely appreciated. This truck-driving watchmaking instructor is over and out. I look forward to seeing you all in September at the Fall Symposium if I don't see you in class or on the road first.

Jason Champion is the AWCI education director.

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AWCI Sees a New Face, Along with a Familiar One, Elected to the Board of Directors

By James Sprague

The results are in, membership has spoken, and AWCI's 2023-24 Board of Directors will see a new face, along with a familiar one, joining its ranks.

Alena Diaz, of Seattle, Washington, along with current AWCI president David Lindow of Lake Ariel, Pennsylvania, were the two top vote-getters in the 2023 AWCI Board of Directors election, which concluded on June 30, 2023.

The election, which had two seats on the Board of Directors up for grabs, saw four candidates—Diaz, Lindow, and Dennis Ondik and Patrick Mont—vying for those openings, which were due to the terms of Lindow and current board member Justin Harrell expiring.

Lindow chose to run for another term on the board, while Harrell chose not to seek re-election.

Out of 1,216 AWCI members eligible to vote in this year's election (as of June 1, 2023, when the election commenced), a total of 265 members—or 21.79% of eligible AWCI voters—returned their ballots, and overwhelmingly selected Diaz and Lindow to fill those two board seats in 2023-24.

Diaz was the leading vote getter in the election, as she was named on 63.64% of the ballots, while Lindow was named on 62.50% of the ballots.

Ondik and Mont, the other two candidates, garnered 40.91% and 24.62% of the vote, respectively.

The overall voter turnout for the election, 21.79%, was the largest voting turnout for an AWCI Board of Directors election since 2019, which had 33.71% voter turnout. It also marked a 3.24% increase from 2022's figure of 18.55% voter turnout.

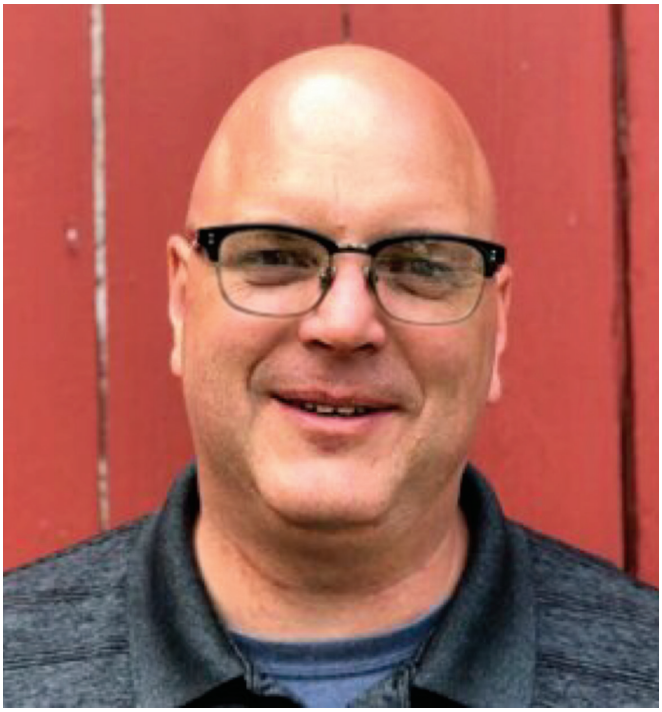
For Diaz, an AWCI member since 2015, her election to the board marks her joining a select group of women—such as the late Alice Carpenter, CMW, CMEW, FAWCI, and Terry Kurdzionak of AWCI Industry Advisory Board member Eckcells—who have served on the AWCI Board of Directors in its 63-year history.

Her being selected by her fellow members to serve on the Board of Directors is an honor beyond compare, Diaz said.

"I am beyond honored to be a part of an organization that has been so important to myself and other



Alena Diaz, who was the top vote-getter in this year's AWCI Board of Directors election.



AWCI President David Lindow, who was re-elected for another term on the AWCI Board of Directors.

horologists. Thank you for giving me the opportunity to give back to a community that I cherish," she said. "I hope to continue to honor the past, while moving into the future in a way that is aligned with the members' dreams and visions."

Lindow, meanwhile, said that he will continue to do his utmost in serving AWCI, and its membership, with his re-election to the board.

"It's both humbling and gratifying to be re-elected. In a real sense it tells me that we're largely on the right track and the membership appreciates the way AWCI is moving forward. Exciting things have been happening, and I look forward to being part of that the next three years. I see great things on the horizon for AWCI and feel privileged to be part of it," Lindow said. "I appreciate the opportunity for three more years to work toward the vision the board laid out in 2021. I consider being a part of bringing that to fruition a privilege and an honor. I can't wait to see where the next few years take AWCI, and I'm convinced we're headed for some of the best years the institution has ever seen. AWCI is an institution on the rise, and I am pleased that the membership has chosen to let me be part of that."

And, though they were not selected in this year's election, both Ondik and Mont had nothing but praise for Diaz and Lindow, along with their thoughts that AWCI's future is set up for success with the newly elected, and current, members of the Board of Directors.

"My congratulations to David and Alena," Ondik said. "I feel we are in good hands."

Mont echoed that sentiment.

"Congratulations to our new and returning board members," he said. "This sets the board well-poised for the future ahead."

Another item on the ballot, which those voting in this year's election approved by an 85.71% to 14.29% margin, were some recommended changes from the AWCI Constitution and Bylaws Committee to two articles in the AWCI Constitution.

The first change, in Article X, Section 1A of the constitution, removed the following line completely regarding committees: The executive director shall be an ex-officio member of the Executive Committee, but shall have no voting rights.

The second amendment, approved by voters, was to Article XVI, which covers constitutional amendments, and simply changed the wording of "executive director" in Sections 7 and 8 to "office staff."

James Sprague is the office manager for AWCI and managing editor for *Horological Times*.

AWCI Board Meetings
Open to All Members!

All members are invited to participate in the monthly conference calls of the Board of Directors. The meeting will be streamed live using the GoToWebinar format, which will allow all interested AWCI members to participate.

To participate in the next meeting you will need to register at least 24 hours in advance. You will need to have your AWCI member number available.

After you register, we will verify your membership. The morning of the call you will receive an email with instructions to join the call.

You will be able to listen to the entire meeting. At certain times during the meeting your feedback may be requested, and you will be able to briefly share your thoughts by using the "raise your hand" button in the platform. The experience will be very limited for individuals who call in on the phone without logging in on their computer.



2023 Election Results

BOARD OF DIRECTORS

Board of Directors	Vote for TWO (2)	Ballots Cast: 264
*** **Alena Diaz**	**168**	**63.64%**
*** **David Lindow**	**165**	**62.50%**
Dennis Ondik	108	40.91%
Patrick Mont	65	24.62%
Abstain	1	

Recommended changes to the AWCI Constitution from the AWCI Constitution and Bylaws Committee, January 2023.	Vote FOR or AGAINST	Ballots Cast: 259
*** **FOR**	**222**	**85.71%**
AGAINST	37	14.29%
Abstain	6	

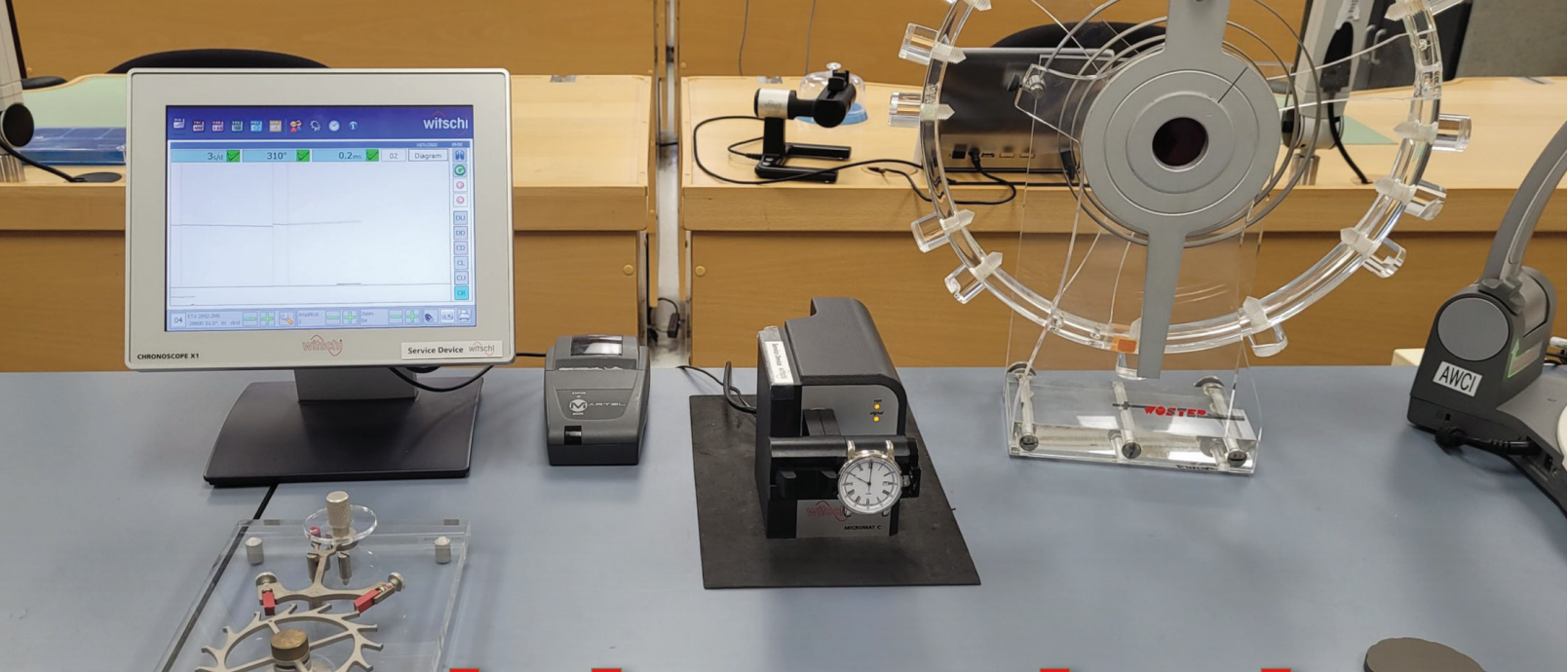
ELECTION STATISTICS

	Ballots Returned	Eligible Members	Percent Returned
ALL eligible voters	**265**	**1,216**	**21.79%**

Ballots – Email (Online)	258	97.36%
Ballots – Default Link (Online)	6	2.26%
Ballots – Mail	1	0.38%
Total Ballots Received	265	100.00%

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Precision Timing

September 18–22, 2023

Instructor: Jason Champion, CW21

Cost: $1,095 for AWCI members · $1,245 for non-members

Class Schedule: 5 days, Monday–Thursday 8 a.m. – 5 p.m., Friday 8 a.m. – 3 p.m.

The purpose of this course is to teach the student most common causes of timing errors and methods of correcting them. Performing precision timing exercises, including staffing, static and dynamic poising. The student will learn about staffing, static poising, hairspring vibrating, manipulations and adjustments, the theory and function of the regulator pins (traditional and ETACHRON), escapement checking, dynamic poising, timing adjustments and analysis (five positions and amplitude in two states of power), and other practical exercises as time allows.

Prerequisites:

- Having a minimum of five (5) years in mechanical watch repair, or having participated in the AWCI Basic Watch Repair course.
- Reading Chapter 7 of *The Theory of Horology* prior to attending the course is recommended.
- Ownership of necessary hand tools

If you have any questions feel free to reach out to Jason Champion our education director at education@awci.com or at 513-367-9800, ext 303.

AWCI

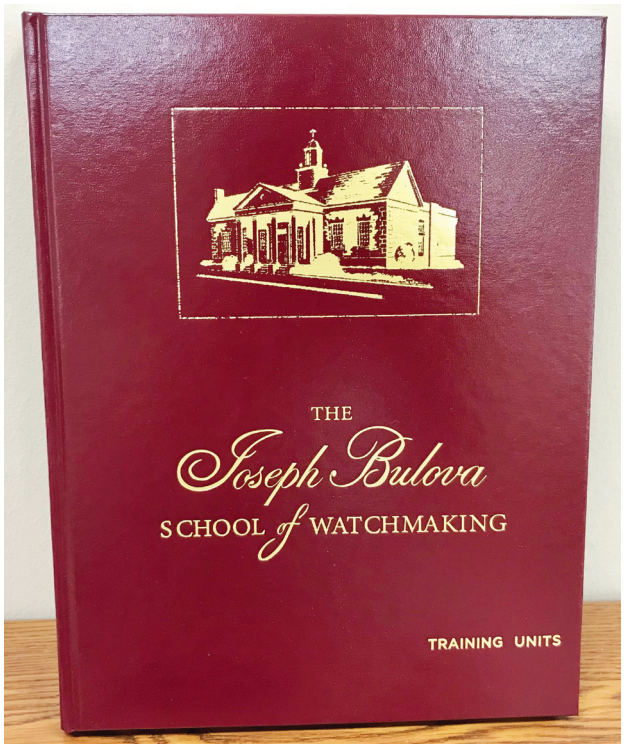
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Popular Watchmaking Book Returns to Stock at AWCI

By James Sprague

One of AWCI's more popular watchmaking texts is now back in stock at headquarters.

Five hundred copies of *The Joseph Bulova School of Watchmaking Training Manual*, one of the several texts that are required reading for AWCI's CW21 and CMW21 certification exams, were received at AWCI headquarters in late June, replenishing the popular textbook of which AWCI had sold out of earlier this spring.



The Joseph Bulova School of Watchmaking Training Manual, back in stock at AWCI after selling out earlier this spring.

For those not familiar with the textbook, it is the original reference manual that was used for students at the Joseph Bulova School of Watchmaking, founded in 1945 by Joseph Bulova's son Arde as part of his desire "to repay, in some small measure, the sacrifice and service of returning disabled veterans after the Second World War."

Arde Bulova, then-chairman of the board of the J. Bulova Company, along with colleague Stanley Simon, created the school as a nonprofit institution and provided training and rehabilitation to disabled veterans, tuition-free, in the vocation of watchmaking, which was as much in demand during that time as it is today. It was named after Arde's father, Joseph, who founded the J. Bulova Company in 1875 in New York City.

The school, located in Queens, New York, later opened its doors to disabled civilians also to learn the watchmaking trade, and operated successfully until its closure in 1993. Its legacy lives on with the Veterans Watchmaking Initiative, an AWCI Research Education Council (REC) school, which carries on the mission of teaching US war veterans, and disabled veterans, the skilled art of watchmaking.

The Joseph Bulova School of Watchmaking Training Manual covers a breadth and depth of watchmaking repair subjects, from staking the balance staff to stem making, hairspring truing to mainspring barrel assembly, escapement repair and more. It is a comprehensive text covering many of the basics of watchmaking and repair for beginners and even veterans of the trade.

The book is available through AWCI's online store, https://www.awci.com/online-store/books for $89.95, plus shipping.

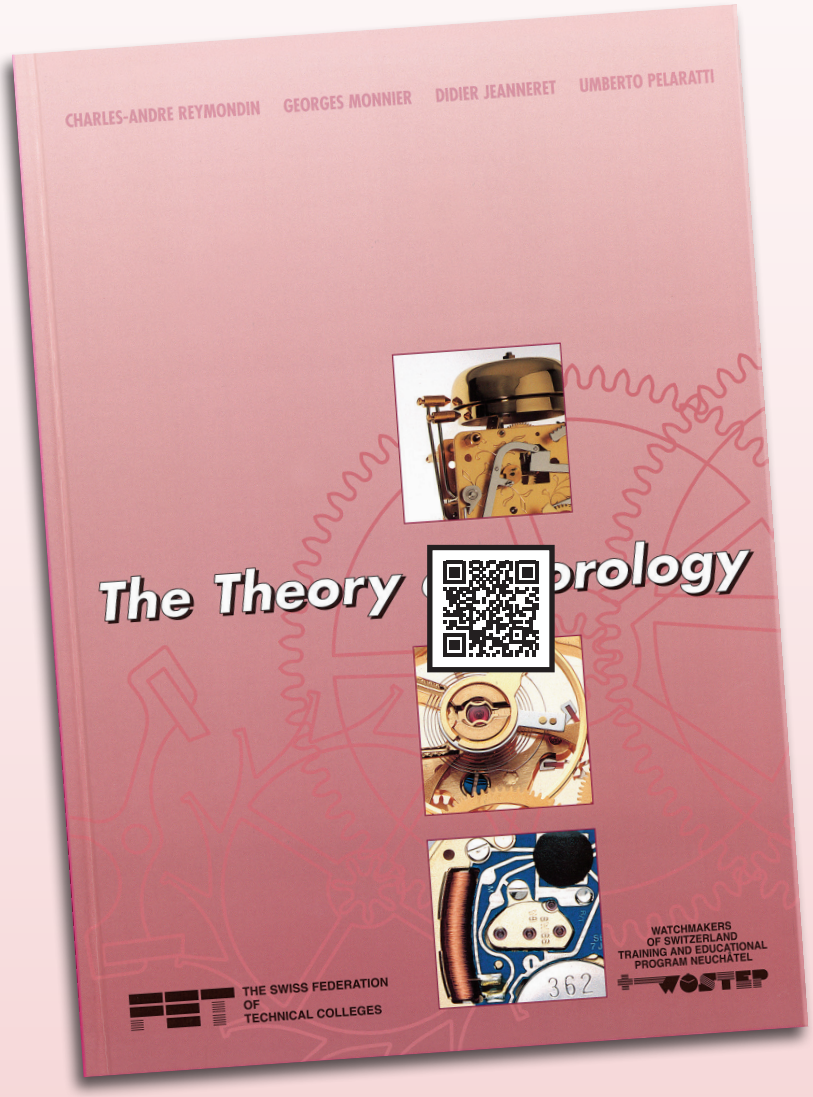
James Sprague is the office manager for AWCI and managing editor for *Horological Times*.

The Theory of Horology

Don't miss out!

Buy now while supplies last!

The Theory of Horology is a hardcover book with 360 large semi-glossy pages of 8" x 11-1/2" and printed in full color. This book is a theory on horology pertaining to watches and clocks. This book is not a detailed guide of how to repair a watch or clock, but from the descriptions given and from the detailed line drawings of all types of timepieces, one can easily deduce methods of repair and re-assembly. *The Theory of Horology* is currently the "bible" of every novice and even the well seasoned watchmaker, clockmaker, and student. It ends with an eight(8) page section on exercises (with answers given of course) which is quite interesting.



$199.99

This book has become the "bible" for schools, training centers, and even watch specialists.

"Everything about the theory of watchmaking under one roof! Includes the latest elements of watchmaking in a very clear form."

~Antoine Simonin
Former Director of WOSTEP

Purchase your book online at
www.awci.com/online-store

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AWCI Helps NAWCC Celebrate 80 Years

By James Sprague

The National Association of Watch and Clock Collectors (NAWCC) turned the big 80 this year, and AWCI was on hand last month to help the organization celebrate the milestone.

The NAWCC 80th National Convention took place July 13–16 at the Lancaster Convention Center in Lancaster, Pennsylvania—just a hop, skip and a jump away from NAWCC's headquarters in Columbia, Pennsylvania—and drew over a thousand people ranging from veteran watchmakers and clockmakers to horological enthusiasts, collectors and everyone in between.

"This year is undoubtedly a milestone in our association's history, and I think it is a time when we should not only celebrate the past but look forward to a bright future," wrote NAWCC Executive Director Rory McEvoy."

Among the events which took place at the convention were an open house of the NAWCC Watch and Clock Museum on July 13, allowing visitors to check out new gallery exhibits Public Time and Skeleton Clocks, along with existing exhibits such as Carriage Clocks Around the World and Vintage Wristwatches. Attendees could witness rose engine demonstrations; and take a tour of the NAWCC and School of Horology.



The former Bowman Technical School in Lancaster, which is now a Hamilton watch store.

The second day of the convention featured the NAWCC Mart—in which AWCI's ELM Trust took part, represented by ELM Trust Chair Paul Wadsworth—along with several lectures and workshops throughout the day, some given by AWCI members such as Jay Dutton, a member of the AWCI finance committee and treasurer on the NAWCC Board of Directors. He gave a presentation titled "Electrical Horology Show and Tell."

July 15 saw the second day of the NAWCC mart, along with several workshops including one from the Horological Society of New York, which saw AWCI members Drew Zimmerman and Bernhard Stoeber assist HSNY's education director, Steve Eagle, with the workshop "Horology 1010: Movement Mechanics"; AWCI Education Director Jason Champion offering workshops on "Water Resistance: Wet and Dry Methods" and "Screwdriver/Tweezer Maintenance"; and even AWCI President David Lindow, alongside one of his many proteges in AWCI member Stephen Franke, doing some clock movement assembling throughout the entire weekend titled



The NAWCC Mart, which is always a highlight of the NAWCC conventions.



AWCI President David Lindow and AWCI member Stephen Franke at their "Clockmakers in Action" demonstration during the convention. The clock assembly they built was later auctioned off at the convention's banquet, with the proceeds going to the NAWCC School of Horology.



Franke doing some cutting during the assembly of the clock movement.

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"Clockmakers in Action," which allowed them to demonstrate to convention-goers foundational clockmaking skills such as turning, sawing, filing, depthing, hole placement, hand cutting, gear cutting and pivot burnishing.

Champion said his workshops at the convention were very successful.

"There were a number of individuals engaged and interested in understanding ways of how to better their working on watches," he said regarding his tool maintenance workshop, and added that when it came to the water resistance workshop, "the majority [of workshop attendees] were currently not doing water testing, and it was good to be able to show them both dry and wet testing, and how they can ensure the external integrity of the case to protect the movement inside."

The night was capped by the 80th National Convention Celebration and Banquet, in which AWCI member Jacob Curtis received both a Blue Ribbon Award and the People's Choice Award in the Crafts Competition for his precision pendulum clock he built (Editor's Note: More on that clock, and its construction, will be featured in the September issue of *Horological Times*), and the clock movement built by Lindow and Franke during the convention was auctioned off, with the proceeds going to benefit the NAWCC School of Horology.

The last day of the convention included more workshops, and also the beginning of the 2023 Ward Francillon Time Symposium, which explored the rich watchmaking and clockmaking heritage Lancaster and 18th, 19th and 20th century Pennsylvania, and ran through July 17.

Overall, Champion felt the convention was a great success for the NAWCC, the host, but also AWCI in its representation there in working with a like-minded horological organization.

"It was good to be welcomed and have a collaborative experience with the NAWCC and our combined membership," Champion said. "There are a lot of passionate people in this industry and their 80th convention was a great place to meet and greet these individuals."



A group of attendees at one of AWCI Education Director Jason Champion's workshops at the convention.

James Sprague is the office manager for AWCI and managing editor for *Horological Times*.

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AWCI Shoulder Bag

Regular $30
Members $27



The AWCI shoulder bag is the perfect companion to keep everything organized, secured, and readily accessible when away from the shop. Constructed with 600 denier polyester fabric for long-term durability, there is a roomy main compartment with pockets and storage slots for electronic devices, pens/pencils, small tools, business cards, and supplies. Handy outside storage pockets can carry larger items. A key clip, durable snap buckles, and a removable shoulder strap add additional versatility. The AWCI logo is embroidered directly onto the main flap, so it will remain visible for many, many years without peeling or chipping away.

Patches

Sew on your apron or lab coat
$5.00 – Members Only
Rocker $2.00 – Certified Members Only



Membership Pin

$12.95



Check out our website for these and other great items!
If you need assistance, contact AWCI at 513-367-9800.

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Occupational Data Sought for Watchmakers, Clockmakers

By James Sprague

A program sponsored by the US Department of Labor is seeking input of those working in the watchmaking and clockmaking fields when it comes to their occupation.

The O*NET Data Collection Program, which is sponsored by the US Department of Labor, is seeking the input of expert "Timing Device Assemblers and Adjusters," to ensure that the complexities of the watchmaking and clockmaking professions are accurately described in the O*NET database. The database, www.onetonline.org, is a free resource for millions of job seekers, employers, veterans, educators, and students across the US.

Currently, the occupation of "Timing Device Assemblers and Adjusters" is described as "Perform precision assembling or adjusting, within narrow tolerances, of timing devices such as digital clocks or timing devices with electrical or electronic components."

O*NET is seeking occupational experts in the watchmaking and clockmaking industry to assist in whether anything needs to be added to, or taken away from, the current description the database has on file (see sidebar information box).

Occupational experts in the field, according to O*NET, meet one of the following criteria:

- Have at least one year of professional experience working in the occupation.
- Have a minimum of five years combined professional experience practicing, training, teaching, and/or supervising others who perform in the occupation.
- Are currently actively involved in the field and based in the United States.

Those meeting these criteria, and who are interested in participating, can contact Constance Bite with RTI International—the O*NET data collection contractor—at cbite@onet.rti.org or 1-877-233-7348, ext. 965. You will be asked to provide your full name, company name and title, daytime phone number, email address, and address with the city and state.

A random sample of occupational experts, who offer to participate in this survey, will be invited to complete a set of questionnaires, and in doing so will receive a $40 VISA gift code along with an oak-framed Certificate of Appreciation from the US Department of Labor.

"We encourage you to consider helping to keep information about your profession accurate and current for the benefit of our colleagues and the nation," read a statement from O*NET. "Thank you for your support."

O*NET-SOC Occupation Title: Timing Device Assemblers and Adjusters

Description:

Perform precision assembling or adjusting, within narrow tolerances, of timing devices such as digital clocks or timing devices with electrical or electronic components.

Example Alternate Titles for Timing Device Assemblers and Adjusters:

- Chronometer Assembler
- Clock and Watch Assembler
- Escapement Matcher
- Hair Spring Truer

Example Exclusionary Occupations for Timing Device Assemblers and Adjusters:

(These occupations are NOT the same as Timing Device Assemblers and Adjusters)

- 51-1011.00 First-Line Supervisors of Production and Operating Workers
- 49-9064.00 Watch Repairers
- 51-9071.06 Gem and Diamond Workers
- 51-9061.00 Inspectors, Testers, Sorters, Samplers, and Weighers
- 51-9071.01 Jewelers

Example Tasks for Timing Device Assemblers and Adjusters:

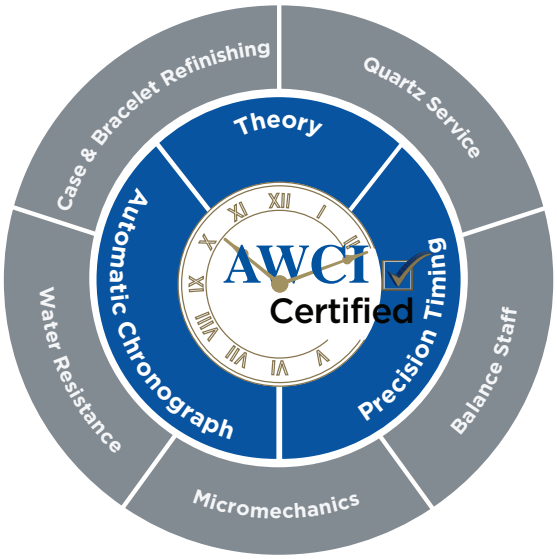
1. Assemble and install components of timepieces to complete mechanisms, using watchmakers' tools and loupes.
2. Observe operation of timepiece parts and subassemblies to determine accuracy of movement, and to diagnose causes of defects.
3. Test operation and fit of timepiece parts and subassemblies, using electronic testing equipment, tweezers, watchmakers' tools, and loupes.
4. Replace specified parts to repair malfunctioning timepieces, using watchmakers' tools, loupes, and holding fixtures.
5. Disassemble timepieces such as watches, clocks, and chronometers so that repairs can be made.
6. Clean and lubricate timepiece parts and assemblies, using solvents, buff sticks, and oil.
7. Examine components of timepieces such as watches, clocks, or chronometers for defects, using loupes or microscopes.
8. Bend parts, such as hairsprings, pallets, barrel covers, and bridges, to correct deficiencies in truing or endshake, using tweezers.
9. Change timing weights on balance wheels to correct deficient timing.
10. Adjust sizes or positioning of timepiece parts to achieve specified fit or function, using calipers, fixtures, and loupes.
11. Mount hairsprings and balance wheel assemblies between jaws of truing calipers.
12. Estimate spaces between collets and first inner coils to determine if spaces are within acceptable limits.
13. Bend inner coils of springs away from or toward collets, using tweezers, to locate centers of collets in centers of springs, and to correct errors resulting from faulty colleting of coils.
14. Turn wheels of calipers and examine springs, using loupes, to determine if center coils appear as perfect circles.
15. Examine and adjust hairspring assemblies to ensure horizontal and circular alignment of hairsprings, using calipers, loupes, and watchmakers' tools.
16. Review blueprints, sketches, or work orders to gather information about tasks to be completed.
17. Tighten or replace loose jewels, using watchmakers' tools.

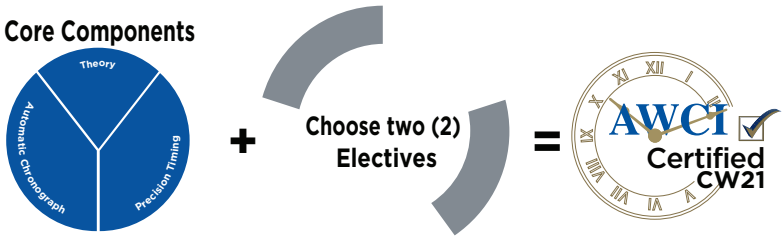
*** The information presented will help you determine if you qualify as an occupation expert for this occupation. You do not need this information for any other part of this process.**

James Sprague is the office manager for AWCI and managing editor for *Horological Times*.

CW21 EXAM

September 23-24, 2023





The CW21 exam is now modular and each component can be taken separately or you can take multiple components at the same time. There are also core components and elective components for the exam. All examinees will take the following three (3) core components: Theory, Automatic Chronograph, and Precision Timing. You will also choose two (2) from the five (5) available elective components. Pricing for each of the components is separate.

Core Components:		Elective Components:	
Auto Chronograph	$1,200	Balance Staffing	$800
Precision Timing	$1,000	Quartz Service	$500
Theory	$200	Case and Bracelet Refinishing	$500
		Water Resistance	$500
		Micromechanics	$500

Limited components will be offered at this time, but we are very excited to be back with our exam. Please review the documents and information on the AWCI website at the following addresses:

https://www.awci.com/certification-standards/cw21/

https://www.awci.com/certification-standards/watchmaking-standards/

https://www.awci.com/become-a-certified-watchmaker/



If you have any questions, feel free to reach out to Jason Champion, our education director, at education@awci.com or at 513-367-9800, ext 303.


AWCI member Jose Acevedo cutting out a balance staff.

Education News

Finding 'Balance'

By James Sprague

Students at AWCI in June found some "balance" in their horological education journeys.

AWCI hosted its Watch 230: Balance Staffing and Timing course June 26–30, 2023, where Education Director Jason Champion worked with students on the fundamentals of balance staffing and timing.

A more specialized course among AWCI's many offerings, it exposed students to the topics of static and dynamic poising, truing and timing adjustments for a mechanical watch, cutting out a balance staff on a watchmaker's lathe, adjusting balance staffs, the verification and analysis of the function of the escapement, and even removing balance staffs from Glucydur balances with the Horia tool.

The course brought four veteran AWCI students back to headquarters for the week, one which saw Champion putting them through the paces in what he termed "a great class."

The sentiment of Champion's was shared equally by the students, such as AWCI member Patrick Aguayo.

"[It is] extremely beneficial to learn new equipment and perfecting technique for repairing watches," Aguayo said. "How to cut through the balance staff hub on the lathe, using the jeweling tool to press out a balance staff through the Glucydor balance, [and] truing and poising methods.

"I am confident now in my ability to poise a balance to get better rates and deltas," he concluded.

For fellow student and AWCI member River DeCanter, every lesson he learned over the weeklong course was valuable, but he especially enjoyed learning how to poise statically, and how he now has a knowledge of how to repair balance staffs.

He also is looking forward to progressing further in his studies at AWCI, stating that he would be taking "any [classes] as long as Jason is teaching."

DeCanter isn't the only one willing to take courses that Champion is teaching here at AWCI, as the next four watchmaking courses at AWCI find themselves currently sold out—The Swiss Lever Escapement, and Case and Bracelet Refinishing this month, Watchmaking Theory in September and Introduction to Watchmaking in early October.

The only AWCI watchmaking courses currently without a waiting list are The Essential Micromechanics—The Watchmakers Lathe I and Tool Making for Watchmakers and Clockmakers: The Watchmaker's Lathe II which take place October 23–27 at AWCI headquarters. Spots remain open for those two courses, and four spots remain open for the Foundational Clock Repair Skills course November 1–3.

To register for those classes, contact AWCI Office Manager James Sprague at james@awci.com or via phone at 513-367-9800, ext. 303.


The students of June's Balance Staffing and Timing course at AWCI headquarters get put through the paces of cutting out a balance staff on the watchmaker's lathe.

James Sprague is the office manager for AWCI and managing editor for *Horological Times*.

Richemont North America

To all AWCI Members:

We at Richemont North America would like to take this opportunity to share with you that we operate a Watchmaking School here in the Dallas-Fort Worth area, and offer a number of programs in partnership with the WOSTEP Organization in Switzerland.

Two of our offered programs allow students to get their degrees as a Watchmaker after successfully completing their courses and beginning their careers as Technicians, where they support many of the functions of Watchmaking. These current programs are:

- **Encasing Technician Course - 4 months**
- **Certified Watchmakers Course - 2 Years**

With that being said, we are delighted to announce that we are adding a third program—the Watch Service Technician Course.

- **Watch Service Technician - 1 Year**

This new course focuses on servicing many of the contemporary calibers that come across a Watchmakers Bench every day. Contemporary calibers that we experience every day in our businesses, and could provide immediate assistance serving clients in your workshops. Once the candidate successfully completes this program, Richemont can then provide training for an additional 6 weeks to certify service to the following Maisons:

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JAEGER-LECOULTRE

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Richemont N.A. is pleased to share that in addition to adding this to our catalogue of Training & Education, we offer this Program free of charge to anyone you would like to recommend or sponsor. The course and Maison Training is entirely free to those that qualify for this opportunity. Richemont will cover the testing, interviewing process, and the actual program itself. You or your sponsored individual would only need to take care of the lodging, meals, and other incidentals for approximately one year. The next class will begin in April 2023.

Should you have any questions and are interested, please feel free to contact John Sokol via email at john.sokol@richemont.com or at either of the numbers below:
Office 817-785-2293 Cell 646-660-2330

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Education News

Applications Now Being Accepted for Annual AWCI Student Tuition Grant

By James Sprague

It is that time of year again—the time when students at watchmaking schools across the United States have a chance to lessen the financial burden they may be experiencing by applying for an annual watchmaking grant through AWCI.

The application period for the annual 2023 AWCI Harold J. and Marie Borneman Greenwood Memorial Fund Grant, administered by AWCI's Education Library and Museum (ELM) Trust, has now open and will be accepting applications for the grant through September 15, 2023.

The grant is possible due to the Harold J. and Marie Borneman Greenwood Memorial Fund of the New Hampshire Charitable Foundation, which was set up to assist watchmaking students. The foundation distributes the interest earned by the fund annually to the AWCI ELM Trust, which in turn distributes those funds in the form of the grant to watchmaking students who are enrolled at AWCI Research and Education Council (REC) schools, apply for the grant, and are recommended by their REC instructor based on either financial need, exemplary student achievement or both, as determined by the instructor.

This year, the ELM Trust received $5,500 from the New Hampshire Charitable Foundation for grants, and at least three grants of at least $2,000 will be awarded to assist deserving students with their tuition and other needs.

Students who are eligible to apply must be full-time watchmaking students enrolled or accepted during the application period at any of the AWCI REC schools—Gem City College of Quincy, Illinois; Lititz Watch Technicum of Lititz, Pennsylvania; North American Institute of Swiss Watchmaking of Fort Worth, Texas; North Seattle College Watch Technology Institute of Seattle, Washington; Paris Junior College of Paris, Texas; and the Veterans Watchmaker Initiative of Odessa, Delaware.

Grant recipients must be legal United States residents and will be required to provide an IRS Form W-9.*

Students can apply for the grants by submitting an application and essay describing their passion for horology, how the scholarship will benefit them, and how they plan to participate in the horological community both in the present and future.

Letters of recommendation are not required but are strongly encouraged for applicants. Applications can be submitted at awci.com/scholarship or https://awci.memberclicks.net/gmf23 before September 15, 2023.

The grant awardees will be chosen by a selection committee consisting of AWCI staff and past recipients of the award. The committee will select three recipients using the following (subjective and objective) criteria:

- Passion for Horology
- Financial Need
- Participation in the Horological Community
- Academic Achievement
- Recommendations

The three students chosen by the selection committee will be notified of their selection by September 22, 2023, and their awards will be announced at the annual AWCI 2023 Fall Symposium, September 28-30, 2023 at AWCI headquarters in Harrison, Ohio.

Harold J. and Marie Borneman Greenwood Memorial Fund Grant

AWCI ELM CHARITABLE TRUST
AWCI Education, Library and Museum Charitable Trust

Three $2,000 scholarships will be award to full-time watchmaking students at AWCI REC schools.
Applications being accepted through

September 15, 2023

Submit applications at www.awci.com/scholarship or https://awci.memberclicks.net/gmf23

(Additional information on page 27)

AWCI does not offer tax advice, legal, or accounting advice. Grant recipients should consult their own tax, legal, and accounting advisors to determine whether the grant will be considered taxable income by the IRS.

James Sprague is the office manager for AWCI and managing editor for *Horological Times*.

The Essential Micromechanics
The Watchmakers Lathe I & II

October 23–27, 2023

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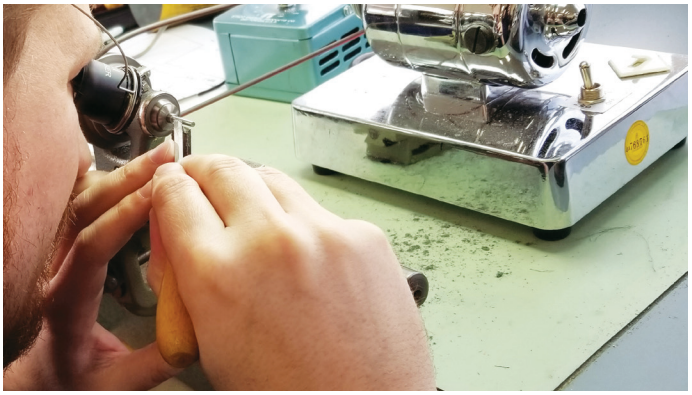
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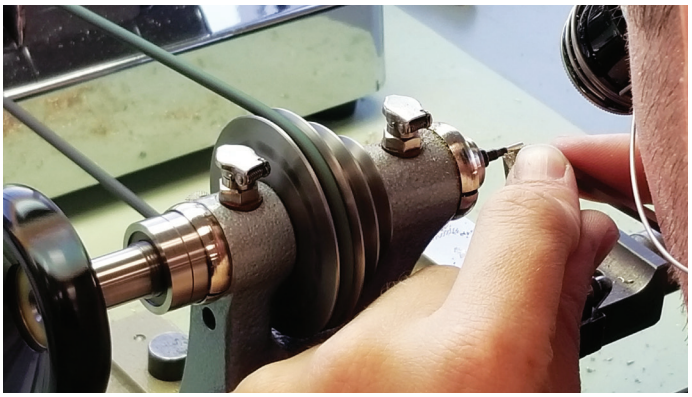
Lathe I

Watch 250

Cost: $1,095 for AWCI members · $1,245 for non-members

Watch 250, Lathe I, you will learn basic micromechanics skills on the lathe. Students will learn all the basics of operating a watchmaker's lathe. Emphasis on the Swiss watchmaker's lathe and utilization of the hand graver are covered during this course. Graver sharpening and maintenance of the Swiss watchmaker's lathe will also be covered.





Lathe II

Watch 350

Cost: $1,095 for AWCI members · $1,245 for non-members

Watch 350, Lathe II, is a continuation to Watchmaker's Lathe I and the purpose is to teach the student the necessary knowledge and hand-skills to manufacture various parts in steel that will be functional in a mechanical watch, e.g. the winding stem.



AWCI

If you have any questions feel free to reach out to Jason Champion our education director at education@awci.com or at 513-367-9800, ext 303.

Harold J. and Marie Borneman Greenwood Memorial Fund Grant

Awarded by the AWCI ELM Trust

The American Watchmakers-Clockmakers Institute's Education, Library, and Museum Trust (AWCI-ELM Trust) announces it is now accepting applications for the 2023 Greenwood Memorial Fund Grant. This year three grants of at least $2,000 will be awarded to students attending full-time watchmaking or clockmaking schools that participate in the AWCI Research and Education Council (REC), and demonstrate a passion for horology.

How to Apply?

To apply for the grant, please submit an application and essay describing your passion for horology, how the scholarship will benefit you, and how you plan on participating in the horological community.

Letters of recommendation are not required but they are preferred.

Applications can be submitted at www.awci.com/scholarship or https://awci.memberclicks.net/gmf23 before **September 15, 2023.**

Eligibility

Students enrolled in, or accepted at, AWCI REC Schools at the time of application are eligible to apply.

Grant recipients must be legal US residents and will be required to provide an IRS Form W-9.**

How are recipients chosen?

The selection committee consists of AWCI staff, AWCI board members, and past recipients of the award. The committee will select two recipients using the following (subjective and objective) criteria:

- Passion for Horology
- Financial Need
- Participation in the Horological Community
- Academic Achievement
- Recommendations

When will the scholarship be awarded?

Recipients will be notified by September 22, 2023.

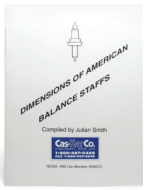
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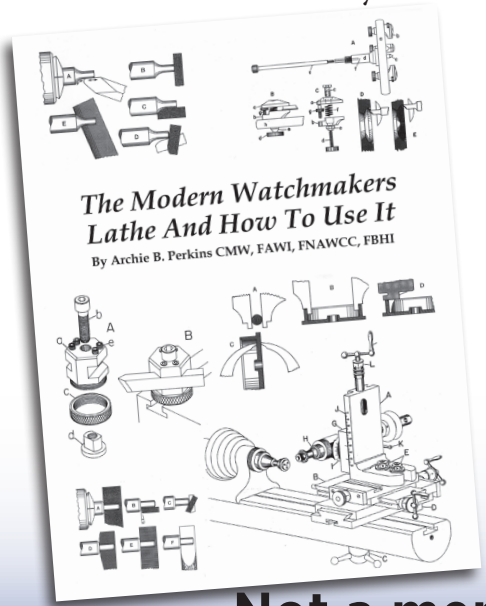


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Education News

Application Period Open for Gow Memorial Scholarship for Student Clockmakers

By James Sprague

Student clockmakers searching for some financial aid to assist in their horological education endeavors need look no further than the Willard House & Clock Museum.

The museum, located in North Grafton, Massachusetts, has opened the application period for its second iteration of the David G. Gow Memorial Scholarship, which was created in 2022 in honor of the museum's former conservator and as part of the institution's goal to support the study of horology and, more specifically, those working toward becoming clockmakers.

"The entry into the career of conservator-level clockmaking is not well defined. Unlike years past, there are virtually no apprenticeship programs available," said Robert C. Cheney, Willard's executive director. "The current path is a self-directed pursuit of skills over the course of many years; piecing together guidance from mentors, reading, attending courses available from various schools, and a trial-and-error approach.

"Adding to the difficulty for students of horology is a lack of financial support to help along the journey," he continued.

The David G. Gow Memorial Scholarship is part of a collaboration between Gow's family and the museum to honor Gow, who served as the Willard House & Clock Museum conservator for more than 25 years before his passing in July 2021.

Gow, in addition to his work with the Willard House, also restored clocks for several institutions and museums, including clocks in the United States Senate chambers and private collectors around the globe.

Any US-based student who has already begun their path on the clockmaking journey and is looking to advance their skills to a museum-quality level is eligible to apply for the $5,000 scholarship, which can be used to attend advanced courses provided by multiple organizations across the US, such as AWCI, the National Association of Watch and Clock Collectors (NAWCC), the Plumier Foundation, or even to assist with an approved master clockmaker/apprentice clockmaker arrangement.

Per the scholarship committee, other uses of the funds will be considered if the student is interested in making horological restoration and conservation a career and needs to develop high-level skills and knowledge.



David G. Gow, the former conservator for the Williard House & Clock Museum, in whose memory the scholarship was created.

The David G. Gow Memorial Scholarship

The scholarship is open for any student based in the United States who is on the path to becoming a clockmaker. It will award $5,000 and the funds can be used to attend advanced courses offered by various clock and watchmaking schools across the United States, including AWCI, NAWCC and the Plumier Foundation.

Application deadline:

November 4, 2023

https://willardhouse.org/david-gow-scholarship

The cutoff date for applications to the Gow scholarship is November 4, 2023. Students can fill out an application form at https://willardhouse.org/david-gow-scholarship or email a PDF letter to Cheney at robert@willardhouse.org with the following information:

- A brief biography limited to 500 words
- An overview of clockmaking experience
- A learning plan—what courses you intend to take and/or master/apprentice plans
- An explanation of how this award will help support their learning plan
- The award size requested (up to $5,000)

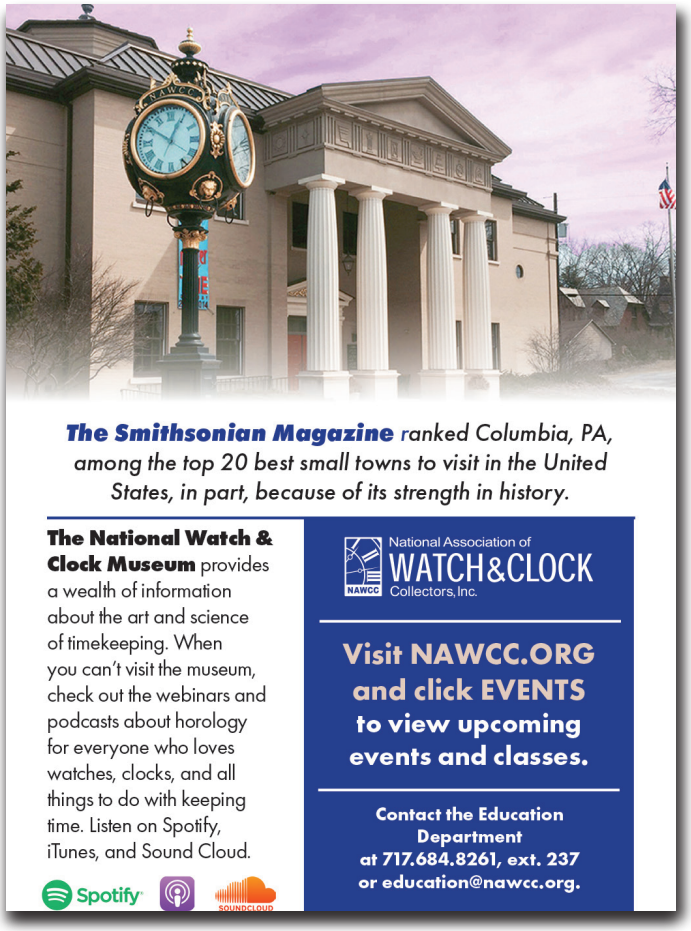
Gow scholarship recipients will be required, as part of the scholarship awarding, to provide quarterly progress updates on their educational path. This is a chance for them to check in with Willard House staff and receive additional mentorship in their journey on a regular basis.

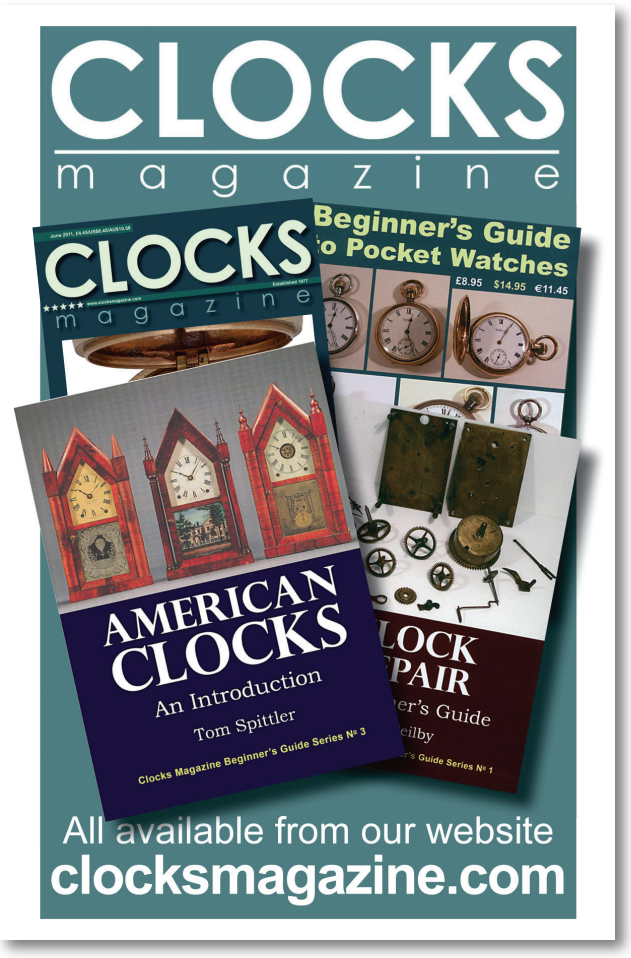
Willard House will notify scholarship awardees no later than December 14, 2023. Previous scholarship awardees can still apply, as "the Gow Scholarship is interested in supporting the right candidates over multiple years."

To learn more about the Gow Memorial Scholarship, go to:

https://willardhouse.org/david-gow-scholarship

James Sprague is the office manager for AWCI and managing editor for *Horological Times*.





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Of Hidden Things: In the Clock Shop
More Bushing Dilemmas!

By Mike Carpenter, CC21, CC

Hello again! I hope everyone is having a great summer. In the previous columns, we have discussed several different bushing situations, where we restored worn pivot holes with a new bushings that were located in difficult areas, and detailed special situations that needed their own particular procedures. I will continue with this theme for the next several columns before we move on to other areas of intrigue in the clock mechanism.

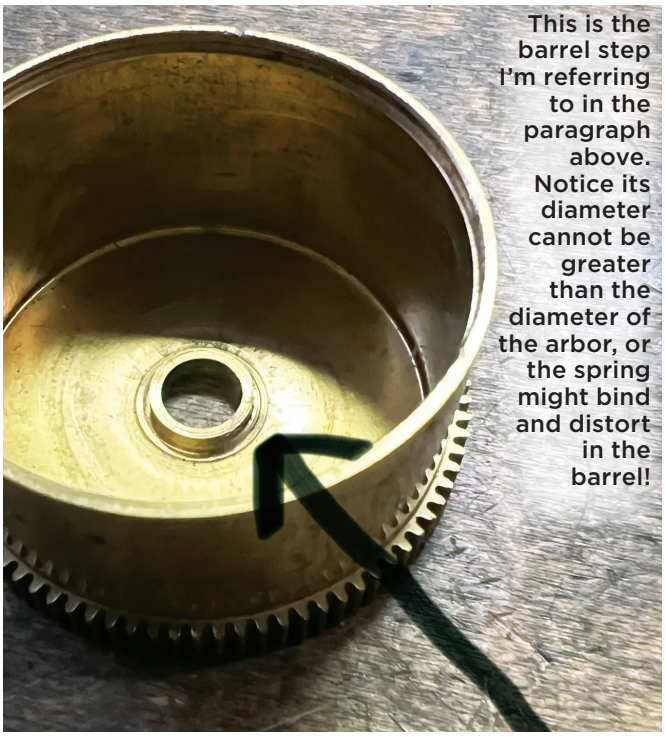
AWCI has a document called the Twenty-First Century Clockmakers Standards & Practices. A link to it can be found on AWCI's homepage. If you haven't read through this document yet, I highly recommend reading it. It basically explains the process of restoring a clock movement. In the section on bushing-worn pivot holes, it mentions that soldering or gluing in bushings is to be avoided. The heat can draw out the brass hardness, leaving it softer than intended. Glue is not durable for metal clock movements as it breaks down over time, unless you are doing woodcase and woodwork repair. The job is often left looking messy and unprofessional. Solder and glue are useful in the clock shop for other jobs though.

But there are exceptions! I have found an exception for just about everything involved with horology. It makes this profession very interesting, as I have been in this trade for 40 years and still see something new every once in a while. There will always be a situation where we find an exception. This is the case of restoring the worn bushings in a going barrel system.

Going barrels are often overlooked for wear. They might be ignored due to a lack of knowledge or tooling to handle the job. Going barrel systems are typically found in higher-quality clocks. Its main benefit is that while winding the clock, the gear train power is maintained throughout the winding process. The barrel arbor pivots are also overlooked for roughness and grooving. The pivot holes in the barrel can get so worn that the barrel edge can rub the plate or another gear in the train. When the barrel is underpower and worn, it will also look crooked in between the plates. That is a big power loss located right at the beginning of the gear train.

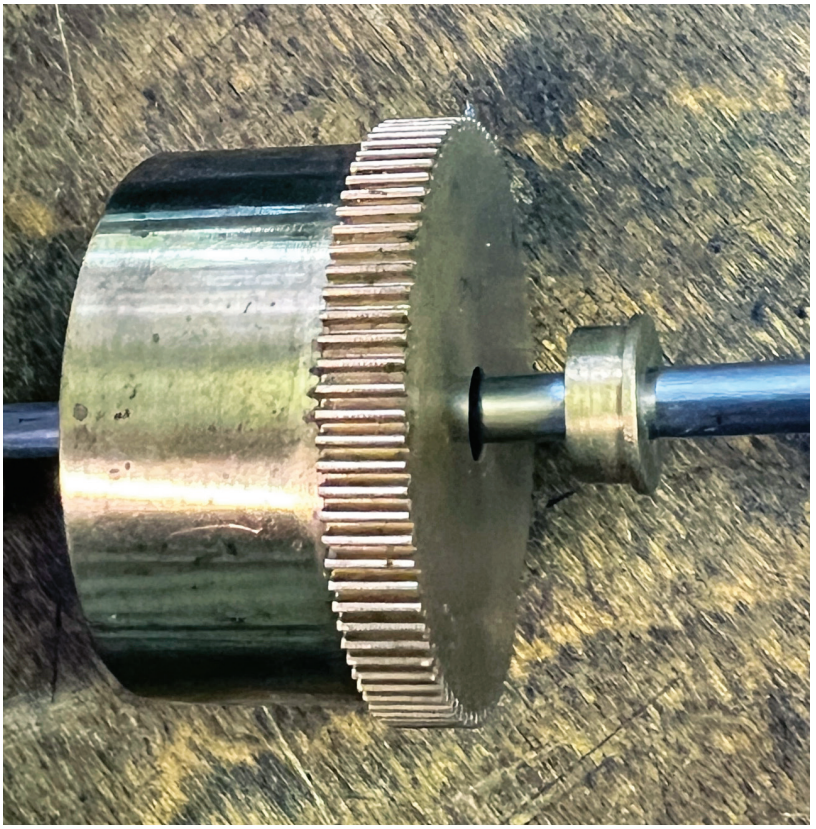
To restore the bearings in a going barrel, we first unload the mainspring and remove it from the barrel and arbor. Next, we polish the arbor pivots in the same fashion as the other pivots in the gear train. Next, take a good look at the barrel and barrel cap bushing holes. It is a good idea to reassemble the barrel and arbor, without the mainspring, to inspect it for wear once the arbor is polished. Some metal had to be removed from the pivots during the polishing process, so the wear will look even more pronounced now.

Over the years, it seems that I have re-bushed the barrel/gear side more than caps. Why is this? It has to do with the barrel teeth being located on the barrel end. The gear on the barrel end drives the gear train and it is under more stress than the cap end. It is subject to greater force and can wear out before the cap wears out. You will also notice there is more bearing surface on the barrel side as compared to the cap. The extra surface area will help to accommodate the high pressure of a fully loaded mainspring, making it last longer before wearing out. This is achieved by adding a step into the barrel hole, and sometimes the cap will have a step too.

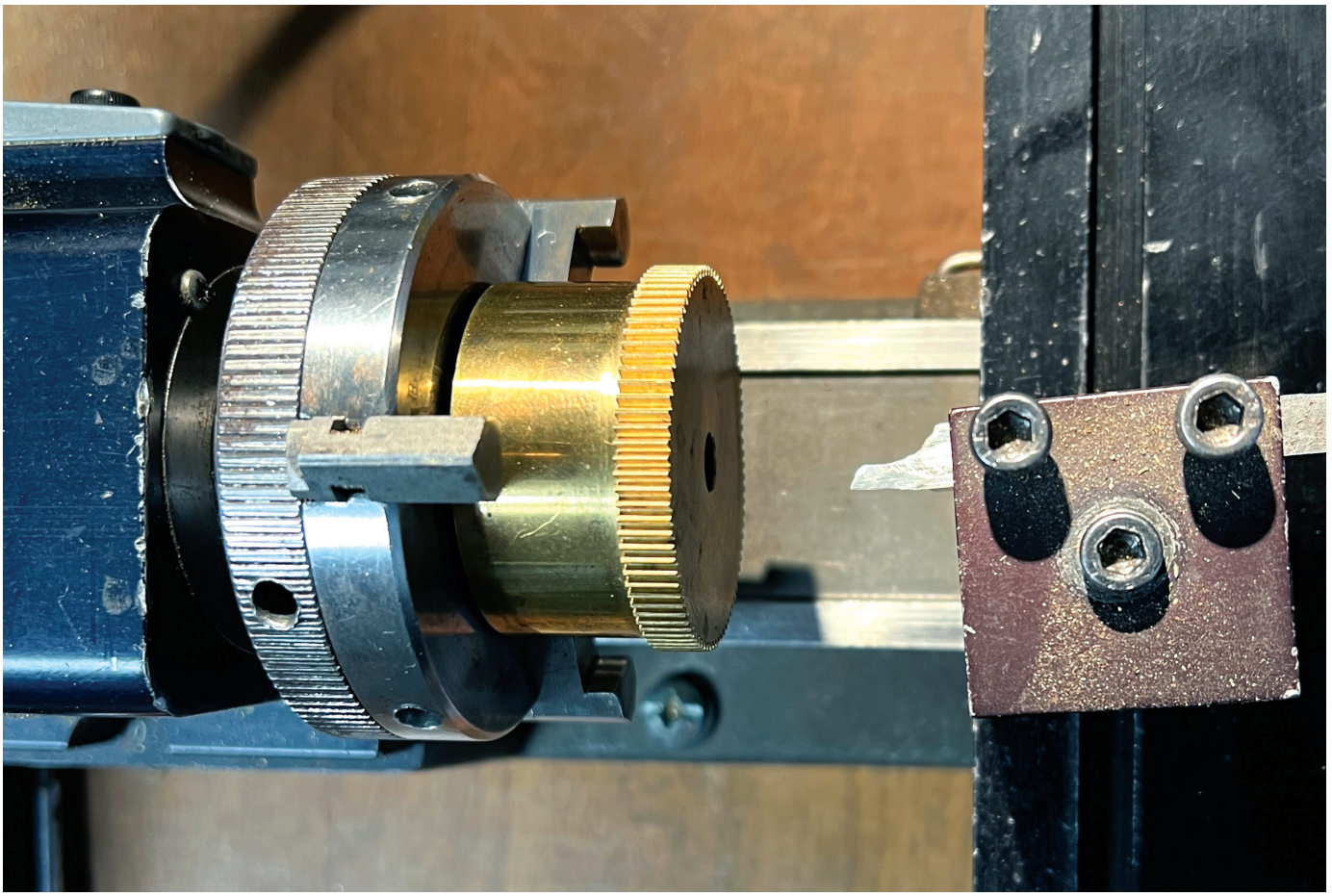


This is the barrel step I'm referring to in the paragraph above. Notice its diameter cannot be greater than the diameter of the arbor, or the spring might bind and distort in the barrel!

So, here's the problem—to replace or restore the barrel pivot holes, this step will be removed while opening up the hole for a new bushing. The new bushing will have to be a "step" bushing. This is one of the few instances where I will break the rules and solder the bushing in place. Which brings me to the next issue. How do you plan to get a concentric hole in the barrel? I have seen jigs with straps, to hold the barrel down for drilling in a drill press, but even with filing for wear first, it will most likely produce poor results. Can someone tell me how to figure out how much filing is needed and the directional wear in a spring-loaded circular rotating system? Since the barrel rotates around the static arbor, it would be difficult to figure out. Remember, the arbor is only used to wind the spring barrel. Think about that for a minute. A crooked barrel can have good depthing with the second wheel at first glance, giving the illusion that it's OK. The clock will run for



This is the orientation of the step bushing to the barrel. The bush isn't finished yet as its diameter is larger than the arbor.

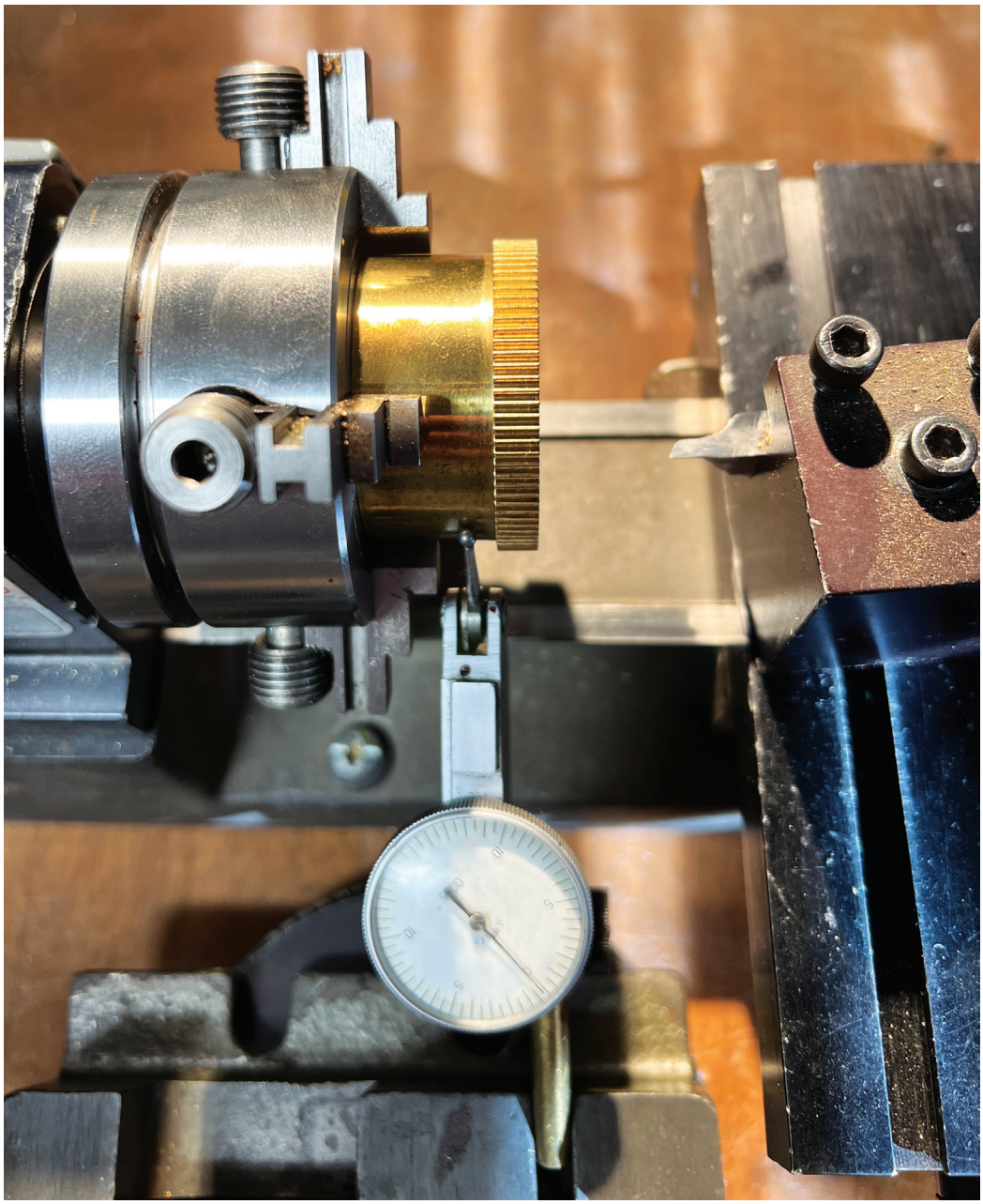


The three-jaw chuck is OK for preparing the barrel for the initial bushing. It will save some time by mounting the barrel quickly for the cutout.

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a few hours or days, then bind up and stop. A fully wound spring might "power" its way through the bad depthing area, but fail later as the mainspring weakens and unwinds—an intermittent binding that can be frustrating to track down.

The next process for this repair is to measure the dimensions. You will need to know the polished arbor's diameter, and the height and diameter of the step. Make your measurements before you start cutting out the hole, as it can be difficult to figure out the step's height once it is removed. Mount the barrel in a lathe's headstock and use a "boring" bar cutter to open up the hole for the new step bushing. The watchmaker's lathe is too small for this job. I have used a Sherline lathe and an old German Unimat lathe for this.



Taking the time to adjust the barrel in a four-jaw chuck to tight tolerances will give the best results. A three-jaw chuck is not as accurate.

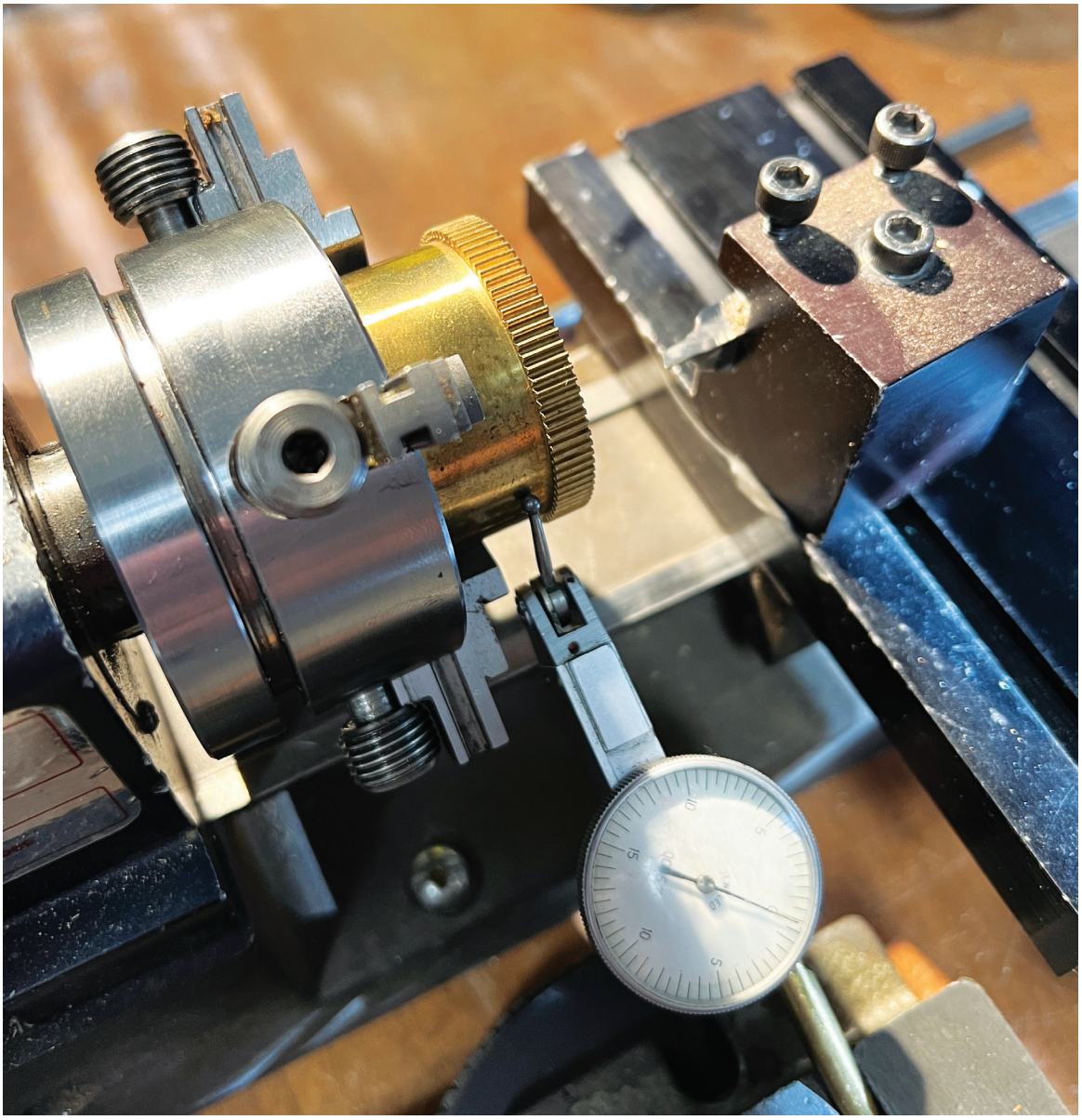
Luckily, we don't need to worry about the barrel hole being concentric at this point. We only need to get the bushing secured in place. Any chuck type that holds the barrel securely will be fine at this stage. Important note—be sure to install the cap on the barrel before chucking it in the lathe. It will help to keep the barrel sides parallel and make for a more solid holding action. Nothing is worse than having a barrel fly out of the lathe at high speed and smash into the ceiling or, worse, your face! Always remember safety rules around lathes and use eye protection.

Now the step bushing can be soldered in place. The reason for the solder is because this is a large bushing, with little material to hold it in place due to the thin walls of the barrel. Be sure to clean up the excess solder and neutralize the flux with baking soda mixed with water.

The last process is to bore out the hole to the correct diameter for the arbor pivot. The barrel will need to be mounted in the lathe with the least amount of "run out" possible. The trick here is to make sure the barrel is turning true in the lathe. The best tool for this final process is a four-jaw chuck. It can be adjusted with a dial indicator to very close tolerances. Be sure to deburr the hole when finished. Assemble the barrel without the mainspring and check it for play and tolerance. If the barrel still has a "wobble" to it, then it will have to be redone.

In conclusion, restoration of a worn barrel can be challenging, and it puts us in a situation that goes against our Standards and Practices for the clockmaker. Make sure to install the cap when mounting the barrel in the lathe and use a four-jaw chuck for the final boring operation. If you don't have a micro-lathe like the Sherline, the barrels can be sent to someone who can handle the bushing job for you. Worn barrels are problems in the gear train that cannot be overlooked.

In the next column, I will discuss another problem situation that has an interesting fix to it! If you have any questions about this column or others in the past, please contact me at ClockDirector@awci.com. "Be sure to come to our upcoming Symposium, I plan to be there if you have any questions."



Here is another view of the four-jaw chuck setup. This setup should be used for the final cutting of the new bushing. It will take some time, but it's worth it!

Mike Carpenter is the clock director for AWCI.

The Changing Face of Early Modern Time, 1550–1770

By Dr. Jane Desborough
Palgrave Macmillan: Springer International Publishing, March 2019

Courtesy of MrWatchMaster, London, England

The Changing Face of Early Modern Time, 1550–1770 is an extraordinary book in every way, exploring the changing use of clocks and watches and offering new insights into early perceptions of time and its practical use.

The book's author, Dr. Jane Desborough—Keeper of Science Collections at the Science Museum in London—must be congratulated on the in-depth research that has led to a reinterpretation of early clock and watch dials on the basis of use. She is well placed to present these fascinating new insights as she manages the museum's Time Measurement collection.

The book is well thought out and divided into eight chapters, taking you on an extraordinary journey through early timekeeping, as follows:

1. Introduction
2. Communication Methods
3. Trust and Distrust
4. Tools of Enablement
5. Calendrical Insight
6. Lunar Wisdom
7. Astronomical Knowledge
8. Conclusion

Each chapter is broken down into relevant subsections that allow the reader to navigate through what can often be extremely detailed explanations, identifying the connection between 16th- and 17th-century watch and clock dials to written material, such as almanacs. We are told that dials were a device for both transmitting and creating knowledge. Users were wealthy, literate and familiar with the latest publication of almanacs and books of astronomy, mathematics, astrology and memory.

An example of this being Thomas Hatton's *Introduction to Clock and Watch Work of 1773*. Very much in keeping with the genre of pamphlets written by clockmakers, Hatton offered a technical explanation, in his preface, of clockmaking (below).

> "That the business of clock and watch-work, is a business of science is evident to any man of reason, for it is no less than an attempt to measure time..."
>
> *Thomas Hatton's Introduction to Clock and Watch Work of 1773*



Expertly and thoroughly researched over the past several years—including some of that research being aided by AWCI—*The Changing Face of Early Modern Time* captures an important period in the profession of watchmaking, while offering a riveting story from that period.

It was clear that by deconstructing the dial and closely comparing its components with texts from the period, dials are positioned within the history of astrology and mnemonics for the first time. Ultimately, the calendar function survived, given that it served a religious and financial purpose in helping users to remember the date for Easter and dates for paying taxes.

It was demonstrated that apart from components which became part of the standard format, every other feature of the dial disappeared once it was no longer useful, with the exception of rare examples that survived for aesthetic reasons. Throughout the period, clockmakers and watchmakers provided users with dials that were genuinely the faces of the kinds of time that their owners could make the most use of. We learned that clockmakers and watchmakers wrote pamphlets, explaining the equation of time, to reassure users that they could trust the time displayed on their clocks and watches more than they could trust the sundial.

Dials in the period prior to 1770 not only made their users' lives easier, but demonstrated the capability of clockwork for providing new combinations of knowledge. For the first time, this book has shown that the true meaning of clock and watch dials can only be revealed through a comparison with printed paper sources which was due to the boundaries that existed between text, diagram and instrument.

By providing the first in-depth deconstruction of dial formats, this book reveals that clock and watch dials also influenced printed paper sources by playing an active role in validating existing communication methods and establishing new ones. It shows how from the late 17th century, equation of timetables were provided in almanacs to give users of clocks and watches information relating to the functioning of their timepieces.

Through time it was evident that from the late 17th century dials became plainer in appearance—as did almanacs—due to the reduced amount of information shown on them. This was mainly a consequence of the decline in the popularity of astrology. Although astronomical indications declined, they were survived by calendar and lunar functions.



Pocket watch by John Arnold & Son, London, 1794. Object no. WCC.429.

Photograph courtesy of the Worshipful Company of Clockmakers and Clarissa Bruce



Table clock, London, c.1600. Object no. 1938-429.

Photograph courtesy of Science Museum/Science & Society Picture Library

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We are told that by the late 17th and early 18th centuries, astronomical clocks were used for teaching, not in a school or university but to groups of fee-paying attendees in public venues or to wealthy individuals in private settings.

It was made abundantly clear that understanding the influence of users' emotions and makers' responses to them has helped immensely to complete the understanding of the many factors that led to the emergence of the standard dial format by 1770.

Finally, and perhaps most interesting of all, is that none of these findings would have been possible without comparing dials with printed paper sources.

This is a fascinating and compelling exploration of an extraordinary period of change for all aspects of life seen through the development of the watch and clock dials. It gives an incredibly detailed and comprehensive insight into how timepieces evolved from multi-functional instruments connected to printed text into a more recognizable standard format we all know today.

Perhaps of particular interest to watch and clock collectors is the re-emergence of the lunar and astronomical functions complications almost 200 years later. For example, it would be fascinating to know how much of an influence the early history of complicated dials had on the likes of Henry Graves when he commissioned his "Supercomplication" pocket watch from Patek Philippe in 1925.

Author: Dr. Jane Desborough; Publisher: Palgrave Macmillan; Number of pages: 292; Published by Springer International, March 27, 2019. Hardcover; ISBN 978-3-030-15352-6; £69.99

For more information, please visit Palgrave Macmillan at https://link.springer.com/book/10.1007/978-3-030-15353-3



Henry Graves's "Supercomplication" pocket watch from Patek Philippe, 1925.

MrWatchMaster, https://www.mrwatchmaster.com/, is a uniquely authoritative online horological publication based in London, England, covering news, opinion, reviews and entertainment about the watch sector.

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Jonathan Kiehl spent 14 years as a watchmaker (WOSTEP, CW21) and technical instructor. He now applies the same precision and analytic skills to financial planning.

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Evenkiehl.com



From the Workshop

By Jack Kurdzionak, CW21, FAWCI

Trademarks Mean Something

We were recently notified, by a Swiss vendor of spare parts, that the Swiss-made mainsprings they sell to us have a new numbering system. No longer will those mainsprings have any watch company trademarked name or initials on their packaging. For example, mainsprings made to fit an ETA caliber 2824-2 had been labeled ETA2824-2, which made it very easy to know exactly what was in the sealed package, Figure 1. The mainspring which formerly had a catalog number of ETA0770.2824-2 will now have the number RA1S13390. A recent shipment of these same mainsprings came in a bag labeled RA1S13390, but the individual packages of mainsprings had no identification as to caliber or dimensions of the mainspring, Figure 2. The contents of the packages are the same but without an identifying label, it will make it very difficult to identify the package contents.

When I queried the vendor of these mainsprings about this numbering change, I was told that the watch companies do not want their names or trademarks identifying any parts they did not manufacture or distribute. Hence, the mainsprings you will be receiving in the future from this Swiss mainspring manufacturer will no longer have a caliber reference on the package applied by the manufacturer. Either our material houses or the end users will need to take the additional step of labeling each package to be certain that a mix-up does not occur.

In case you had not noticed, more and more watch manufacturers are not supplying mainsprings for their movements. Instead they are supplying a barrel complete with mainspring. For many watch movements, replacement mainsprings will only be available from the remaining mainspring manufacturers, rather than from the manufacturers of the movements. Trademarks are valuable property, and their owners will defend them from any unauthorized use.

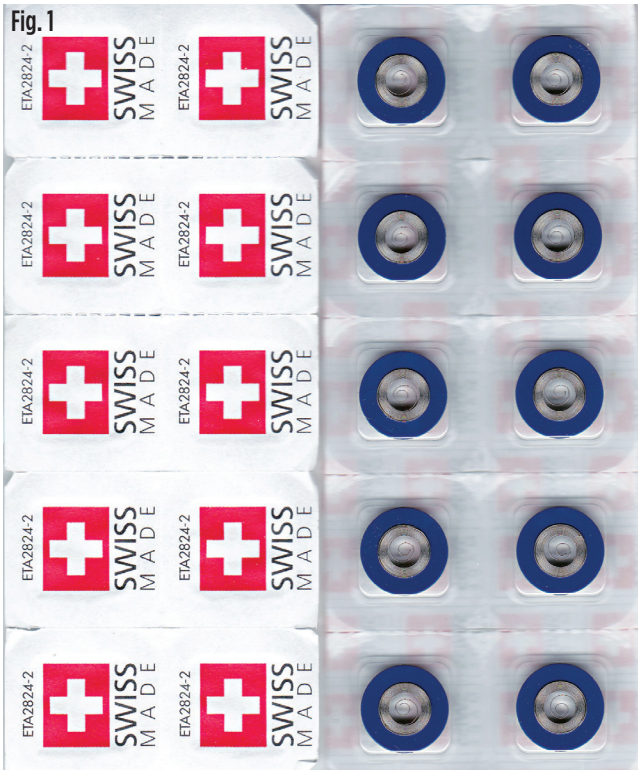


Fig. 1

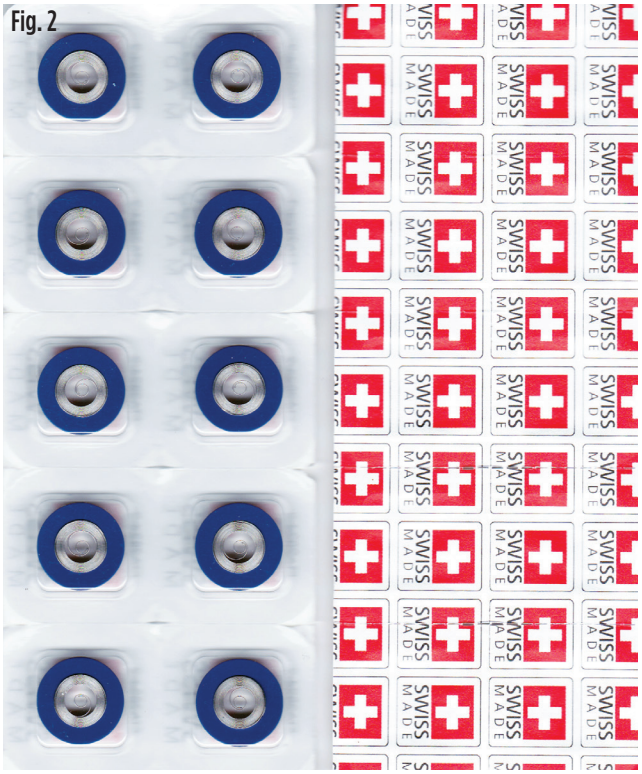


Fig. 2

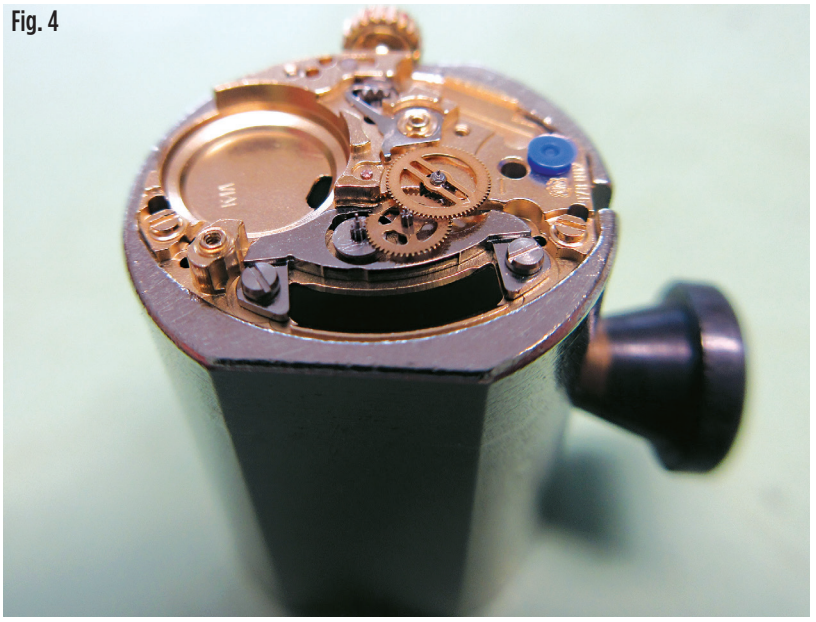
Stand up Straight

Back in the dark ages, when I was in elementary and junior high school, our teachers often told us to stand up straight. When we were at home, we received the same direction. Slouching was easy and seemed to do no harm, at least not at that age. Slouching is still easy, especially for the magnetic rotor in the train of a quartz watch movement. Because the rotor is centered between the poles of the stator, which is made from iron, it is attracted horizontally to the stator, making it nearly impossible to keep the lower rotor pivot in its jewel and with the rotor standing up straight. When watchmakers assemble the movement, the rotor must be upright with its lower pivot in its jewel in order to fit the train wheel bridge. After countless quartz watch repairs, I learned how to manipulate those rotor pivots into place without spending too much time doing it, but I inherently knew there had to be a better way to assemble the train because these movements are assembled very rapidly at the factory. I still do not know how the people assembling these movements manage to get that rotor to stand up straight, but I know how watchmakers servicing these movements can do it without any special tool other than a screw with a flat head.

Fig. 3



Fig. 4



For this article, I happened to be servicing an ETA 978.004 movement. These movements are long discontinued, so it makes sense to service the existing movement whenever possible. Whenever I clean a quartz movement, I always leave the stator in place on the main plate, secured by two screws, while the movement is being cleaned. The iron alloy used for the stator is soft and can be distorted during the cleaning process. Securing it to the plate prevents any damage to the stator. After the movement has been cleaned, I remove all of the small magnetic particles that are attached to the rotor, and its magnet, with a cleaning paste such as Rodico. Then I place the rotor in position without any concern if its lower pivot is positioned in its jewel. I just want it positioned in the stator. Next, I turn the movement over so it is dial side up and place a flathead screw directly over the jewel for the rotor. The very strong magnetic force from the rotor causes the screw to stand erect, Figure 3. Then I turn the movement over, so it is now dial side down, Figure 4. With my bronze tweezers I nudge the rotor into its lower jewel, and it now stands up perfectly straight because its magnet is strongly attracted to the screw on the other side of the jewel. Since the rotor is centered in the stator, the horizontal magnetic attraction is equalized in all directions and the rotor remains upright. Now it is a simple matter to just install the other two train wheels, replace the train bridge and check for train freedom. After that, the screw on the dial side can be removed.

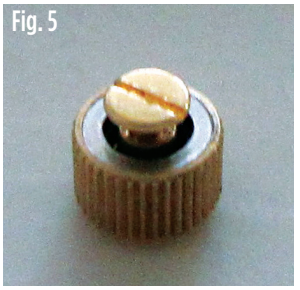
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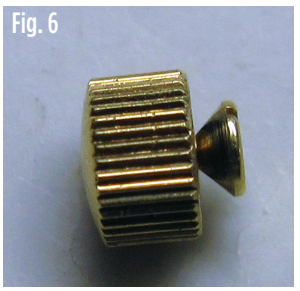
'Sometimes You Have to Be a Watchmaker'

I remember hearing Irving Cohen, owner of a material house in Boston, say this to his customers when they complained about a replacement part he sold that did not quite fit the watch. Perhaps the tongue on the end of a new mainspring needed to be reshaped, so it could attach to the barrel wall. Maybe the GS crystal needed to be trimmed before it would fit the bezel. Irving, after over 50 years in the material business and knowing many of his customers nearly that long, often reminded them that part of watchmaking was knowing when and how to adjust replacement parts to fit a watch. Factory-genuine material such as those parts supplied by Bulova, Hamilton, Omega, etc., usually fit without requiring adjustments, but parts made by aftermarket suppliers often needed to be adjusted to make them fit properly. Today, we use mostly factory-genuine parts which fit perfectly, so much so that the skills required to make any adjustments are being lost, due to the aging and passing of those watchmakers who knew how to adjust parts.

I often wonder how many techniques I acquired by trial and error could have been learned if I had had the opportunity to work with someone who already possessed those skills. The most recent challenge was presented when a vintage (circa 1985) Concord watch in an 18-karat case arrived, missing the four gold case back screws that secured the case back to the bezel. Concord departed the American market about 15 years ago. Consequently, there is no genuine material available for those vintage watches. Generic 18-karat case-back screws are available from material houses, but none of those generic screws would fit this case. The thread size (0.70mm) was no problem, and the length of the screws could easily be reduced as needed. The problem with these generic screws was the shape of the screwhead.

The replacement screws have conical-shaped heads about 1.50mm wide at the top, and the recess for the screw on the case back was cylindrical and only 1.00mm wide. I knew that if I could turn the screw in a lathe, I could reshape the head and make it fit the recess on the case back. But the problem was how to safely hold a soft 18-karat screw in the lathe collet without damaging the threads. Then I remembered what the late James Huckabee (AWCI Fellow) told me about making replacement parts. He said it was best to put a handle on the part to be able to hold it while you worked on it. How do you put a handle on a small soft screw? In this case the handle was a water-resistant crown, cylindrical in shape, 4.00mm wide with a 0.70mm thread for the stem. I found that crown in my collection and screwed the case screw into the crown until it hit bottom, Figures 5 and 6. Now I had my handle. Next the crown went into a 40mm collet on the WW lathe, and within a few minutes, I was able to reshape the head so that it fit perfectly into the recess on the case back, Figure 7. The threads on the screw were undamaged during the process, as shown in the before and after photo, Figure 8. I proceeded to alter the remaining screws. There must have been a reason why this case had all four screws missing. Were they so badly damaged they could not be reused? Were they lost? Were the threads in the case damaged? There was no way for me to answer the first two questions, but I could check each hole in the case to make certain the threads in the case were in good condition. The first three were perfect but the fourth had no remaining threads. Apparently, someone had stripped the threads out of one hole so that the 0.70mm screw fell right in. As luck would have it, I had an 0.80mm tap and was able to re-tap the threads to the oversize 0.80mm. Then the final screw I modified, using the same technique, had 0.80mm threads and it fit perfectly. Just to help out the next watchmaker who opens this case, I used my fine-tip marking pen to mark the inside of the case back to indicate the oversize thread on that one hole. In case you want to give this technique a try, you can also use a stem extender as the handle for the screw. Stem extenders are available in a wide variety of tap sizes, and the female end of the extender also fits nicely into a lathe collet. As Irving said, "Sometimes you have to be a watchmaker."


Fig. 5


Fig. 6

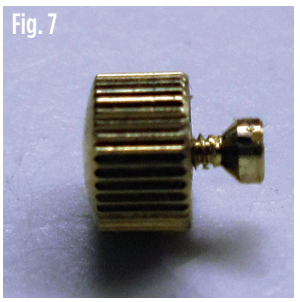

Fig. 7


Fig. 8

A Nice Paint Job

During my high school and college years, plus a few years later, I worked in a gasoline service station on nights and weekends. Looking back, I realize that job was my in-service education, where I learned the fundamentals of operating a small business in addition to learning basic auto repair. A few days ago, I took in a vintage Rolex that appeared to be in excellent condition for a watch of its age (circa 1968). The only apparent problem was a worn crown. That was until I took a closer look, and it brought me back about 60 years when I learned about buying a paint job.

At that time there was a Cadillac/Oldsmobile dealer in a nearby city who sold reconditioned used cars, and they sold quite a few of them. They looked terrific with shiny paint, new carpets, odometer reset to zero miles, and a set of re-grooved tires.[1] The engine compartments were steam cleaned and they were sold with a 30-day warranty. Many of them arrived at our service station after the brief warranty expired. They often needed brakes, exhaust system repairs, leaky seals and hoses replaced, and new tires to replace the re-grooved ones. We knew instinctively where that used car was purchased. The owner of the service station would privately remark to me that the customer "bought a paint job," instead of a decent used car. Without making a large investment, the dealer was able to clean up a worn-out car to make it eye appealing and salable with a substantial markup. The dealer was not doing anything illegal, but they were being deceptive by making the used car much better in appearance to help disguise its inferior mechanical condition. Even resetting the odometer back to zero miles was legal at that time, because it was obvious that it was done.

Back to that old Rolex. The dial and hands looked clean, the crystal was new but did not have the correct profile, and the crystal had a loose sound when tapped with a fingernail. The case was nicely refinished. Upon opening the case I noted missing screws, water damage, and worn parts. Then I checked the seemingly new bracelet and it appeared to be counterfeit, although it was adorned with Rolex trademarks. I immediately thought back to my youth when an unscrupulous used car dealer could dress up a worn-out automobile and pass it off to some unsuspecting buyer as something in far better condition than it actually was. I do not know if used car dealers still engage in that behavior, but I do know anyone purchasing a valuable used watch needs to have it inspected by an expert, just to be certain they are not being sold "a nice paint job," instead of a quality preowned watch in excellent condition.

1. Tires that had deeper grooves cut into worn treads to make them appear less worn but also more prone to catastrophic failure when performed on tires not designed for re-grooving.

Jack Kurdzionak, watchmaker and watch material specialist, owned a Boston-area watch sales and service shop for 40 years. He has a BS (Northeastern University, 1967) and has studied at ETA, WOSTEP, BHI, SGUS, and AWCI, and works for Eckcells Watch Materials.

Creating a Six-Tooth Segment for a Tall Case Hour Wheel

Previously published in *Horological Times*, October 2003

By Edwin U. Sowers III, CMC

In our ongoing column "From the Archives," we are reprinting past articles from *Horological Times,* which horologists will still find relevant today. This article, published in the October 2003 issue of *Horological Times,* was courtesy of Edwin U. Sowers III, CMC. A retired mechanical engineer, Sowers received his bachelor's and master's degrees in mechanical engineering from Drexel University. His engineering career was centered on fluidics and he held more than 15 patents in this field. After retiring, he took up clock restoration. He restored many clocks and became a Certified Master Clockmaker (CMC) with AWCI. He wrote numerous articles for horological publications such as the *Watch and Clock Bulletin, Horological Times* and the *Clockmakers Newsletter.* He passed away in 2012.

It is not uncommon to replace one or two teeth in a wheel. It is more of a challenge to replace a 6-tooth segment. The need for such a repair arrived in the form of the snail hour wheel on a tall case clock movement. A five tooth segment had, at some prior time, been inserted into the wheel, as shown by Figure 1. Looking at Figure 2, it is not obvious how reliable advance of the snail could have occurred. It would appear that a 5-tooth wedge from another wheel had been imprecisely over-soldered onto the snail wheel.

The 5-tooth segment had to go. The plan was to then insert a properly fitted brass blank into the wheel and hand form suitable teeth along the periphery.

The tooth to the right of the 5-tooth segment, shown by Figure 2, was incomplete. It was decided to remove that tooth also and install a 6-tooth segment. Figure 3 shows the old segment removed and the cut made to remove the sixth tooth. All three surfaces of the cutout were carefully filed to ensure a straight edge for each.

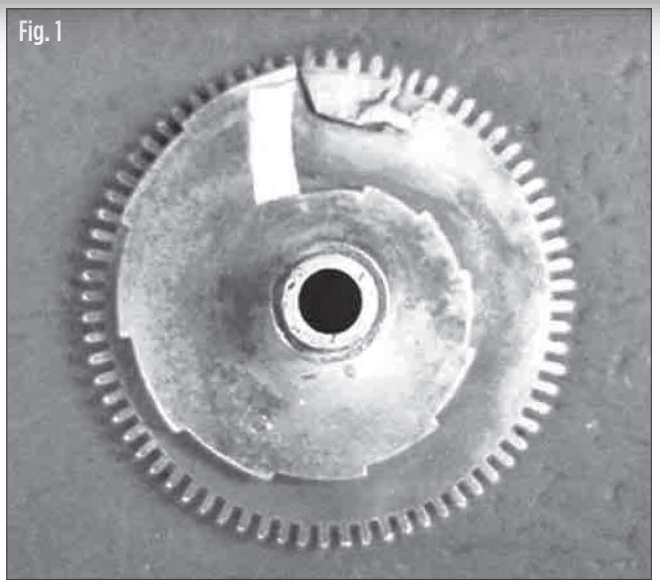
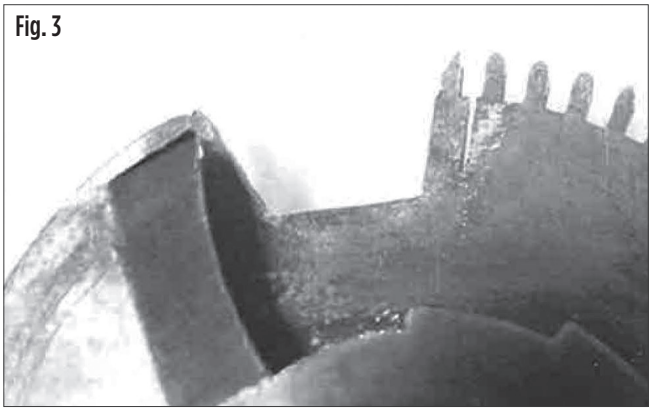

Fig. 1


Fig. 2


Fig. 3

A tracing was made of good teeth on the wheel, as shown by Figure 4, to define the spacing of the teeth. As noted by the Figure, the wheel outside diameter (OD) was 2.237" and the root diameter 2.013". The nominal shape of the new insert, Figure 5, was laid out on the plate which had been colored with DYKEM bluing (Reference 1). The insert had been cut from an old German clock plate of adequate hardness, and of 0.070" thickness-the same as that of the hour wheel.

As can be seen the two sides of segment were radial, leading to essentially a wedge shape. When installing up to 3 teeth, I prefer a straight, parallel sided insert; a tight and strong insert can more easily be achieved in this manner. However, when dealing with the present 6 teeth, the two teeth outside and next to the insert would be undercut and weakened with a straight-sided configuration; this approach would also remove more of the wheel material than desirable.

The wedge was cut out, oversized, with a jewelers saw, Figure 6. By careful filing the segment was fitted into the hub as shown by Figure 7. The objective was to establish full metal-to-metal contact along each side. The depth of insert positioning was established by the sides, not the bottom. A slight clearance was allowed along the bottom edge to ensure a tight fit on both sides. The stresses between the insert and the wheel hub, after soldering, should be through metal-to-metal contact, not born by the solder; the solder serving basically to keep the insert in place.

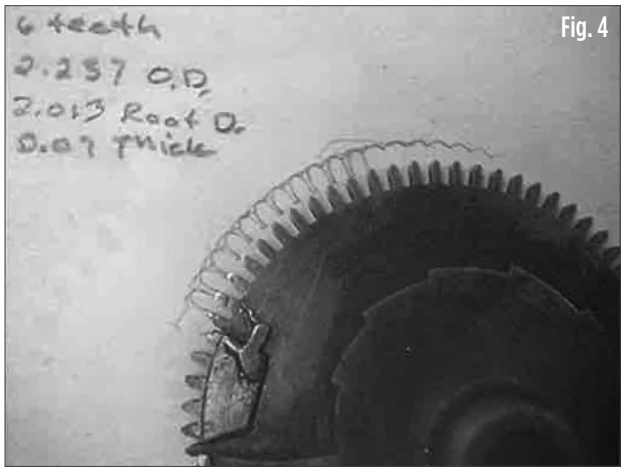
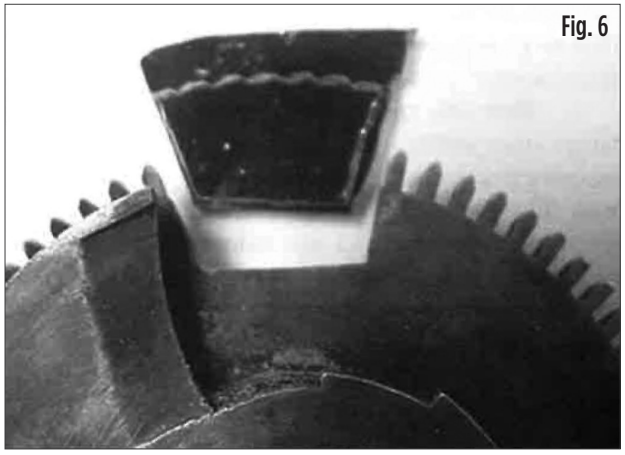
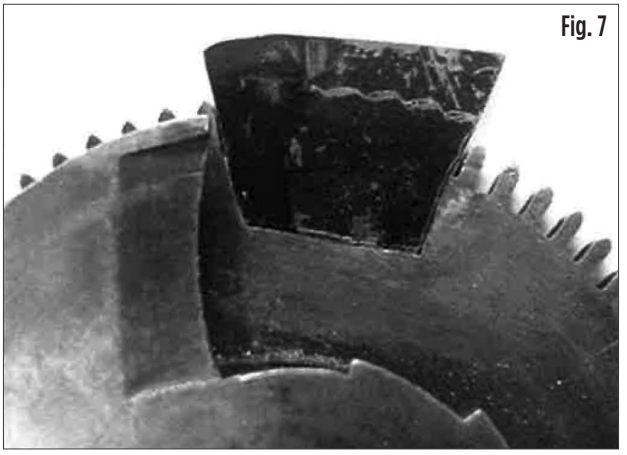


Fig. 4


Fig. 5


Fig. 6


Fig. 7

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Fig. 8

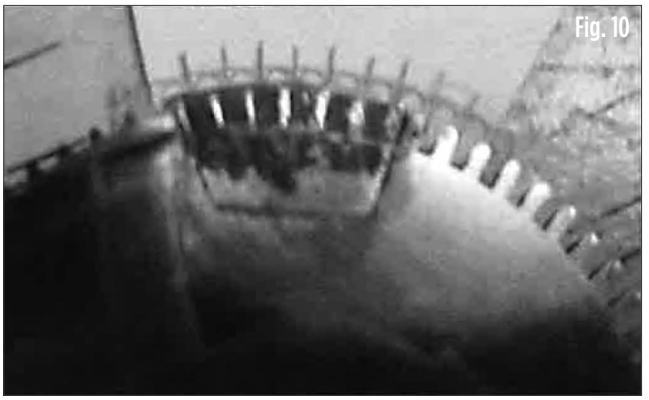

Fig. 9

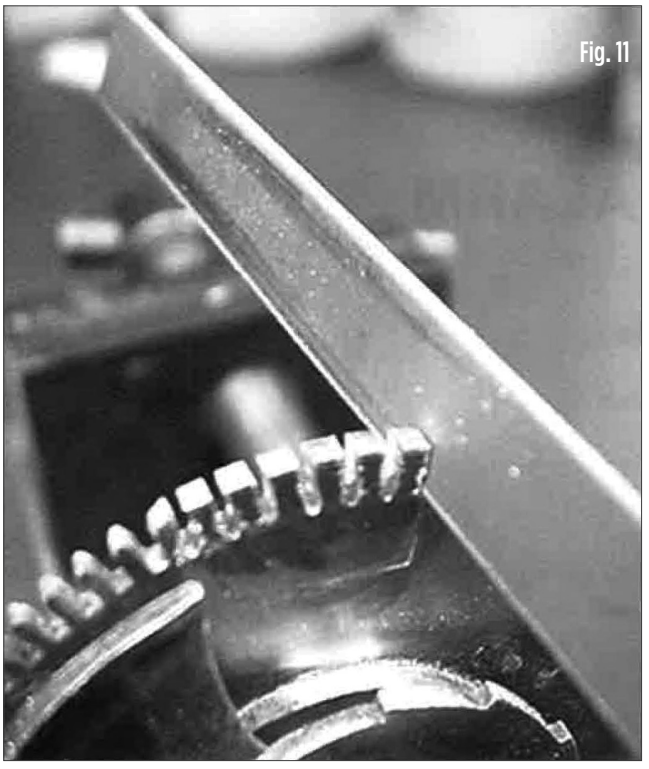
Now with the insert accurately shaped to fit into the hub, the insert was soldered into place with Tix Solder (Reference 2). This solder has a low melting point which reduces the chance of annealing the hardened brass with overheating. The insert was tapped snugly into place with a hammer and secured by a parallel-jawed machinist's clamp, as shown by Figure 8. Tix soldering flux was applied and small pieces of Tix solder were laid along the intended solder joint.

Heat was applied from below with an alcohol burner. Immediately upon flowing of the solder, the heat was removed, preventing overheating and softening of the brass. To solder the right-hand side, and not melt the solder on the left, the clamp was tightened down into the soldered left side, to serve as a heat sink. Soldering was accomplished in the same way as with the left side. After soldering, a solution of baking soda in water was brushed onto the soldered area to neutralize the acid-based flux. The secured insert is shown by Figure 9. The projecting end of the insert was sawed off and filed down to slightly larger than the wheel OD.

The next step was to mark the insert for filing out the teeth. To the prior described tracing of satisfactory teeth on an index card, radial lines were extended outward from the tooth gap locations, as shown by Figure 10. The insert was blued. The tracing was laid behind the insert, with the tooth tips coincident with the tracing OD. The location of the space between teeth was scribed into the bluing as shown.

A favorite Swiss slotting file, 0.7 mm (0.028") thick, #2 cut, with teeth in the outer edges only, was used for the initial filing of the between-teeth spaces, Figure 11.

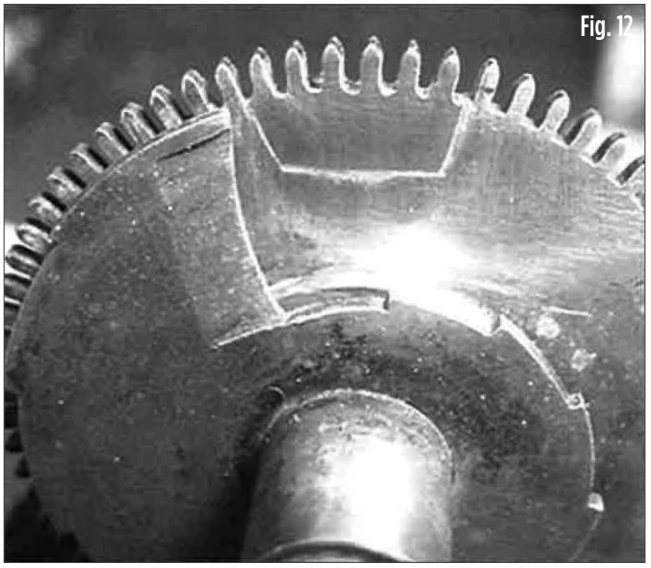

Fig. 10

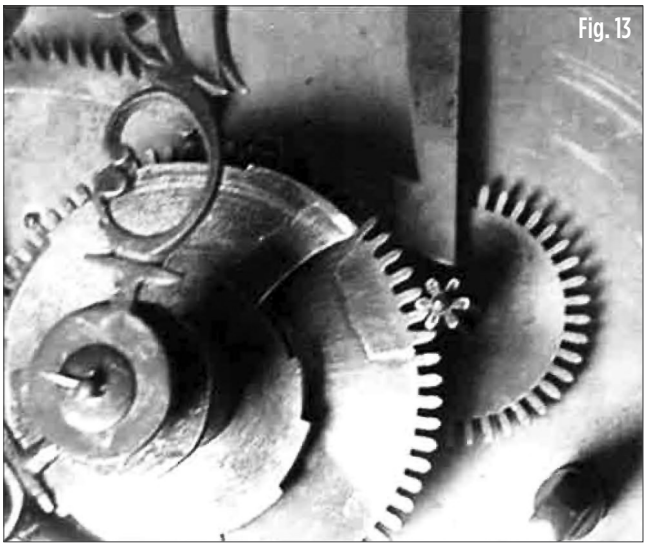

Fig. 11

Similar files can be obtained from Grobet (Reference 3), their FL 31.16 Series Joint Round Edge Files, in thickness from 0.016" to 0.059". Further finishing was accomplished with a flat pattern maker's file, ground down on one side to reduce thickness and also to allow for filing with one side only, without damaging the adjacent tooth. The teeth were carefully filed to the same width as the original with the spacing being equal. The tips of the teeth were rounded, using a barrette pattern maker's file.

While rounding the teeth, the tips were cut back to achieve the 2.237" OD, measuring from each tooth across to a tooth on the opposite side, using a dial caliper. During final finishing of the teeth tips, the spacing was checked for uniformity with a number drill a few sizes larger than that which would fall down between the teeth. The finished teeth are shown by Figure 12.

The snail unit, with repaired hour wheel teeth, is shown returned to the movement by Figure 13.


Fig. 12


Fig. 13

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By Donna Hardy

Geneva Watch Days 2023

Geneva Watch Days will take place from August 29 to September 2 this year. As of July, the event confirmed that a lineup of 39 brands would participate. There will also be a large tent opposite the Beau Rivage Genève hotel, which will host seminars and social events in the evening.

The event was launched in 2020, the first year of the coronavirus pandemic, when Baselworld and Salon International de La Haute Horlogerie (SIHH) had to be suspended.

Bulgari and Breitling decided that a simpler, less costly show would work, and so Geneva Watch Days was born. Its format was less risky for exhibitors if the event had to be postponed. They convened on the banks of Lake Geneva with eight brands, and the event turned out to be refreshingly egalitarian compared to its forerunner, Baselworld.

The brands exhibiting this year include Angelus, Armin Strom, Arnold & Son, Artime, Bausele, Bianchet, Breitling, Bulgari, Byrne, Claude Meylan, Corum, Czapek & Cie, De Bethune, Doxa, Frédérique Constant Group, Girard-Perregaux, Greubel Forsey, Hautlence, HYT, Jacob & Co., Konstantin Chaykin, Krayon, Laurent Ferrier, Louis Erard, Massena Lab, Maurice Lacroix, MB&F, H. Moser & Cie., Oris, Perrelet, Phillips in association with Bacs and Russo, Raketa, Reservoir, Ressence, Singer, Tiffany & Co., Trilobe, Ulysse Nardin and Urwerk.

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Fake Luxury Watches Become a Big Problem

Watchfinder's CEO, Arjen van de Vall, says that one in 10 of the luxury watches offered for sale to Watchfinder in the past year have been fakes. Havocscope, a data company for illegal markets, estimates that 40 million counterfeit watches are sold globally each year, generating profit of roughly $1 billion.

Watchfinder conducts a thorough authentication process on every watch it receives, and van de Vall says the rise of "super fakes" is alarming.

Watchfinder has a 60-step process that includes inspecting watches cosmetically, removing the case back to check the movement if there are suspicions, matching serial numbers to those on any documentation accompanying the watch, and ensuring the watch has not been registered with any databases for lost or stolen watches.

van de Vall says that in the past, only 20% of watches needed further inspection to determine if they were fake. Today, around 80% of watches need thorough testing and inspection to determine if they are genuine or fake.

It is becoming increasingly difficult to spot the fakes because they are being produced very similarly to how their authentic counterparts are made, using the same equipment and tools as leading Swiss manufacturers and using highly trained watchmakers who use the same techniques to assemble and finish the watches. To compound the problem, a mix of real and counterfeit parts are often used.

"The level of sophistication is increasing significantly," says van de Vall

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Donna Hardy is a contributing editor for *Horological Times*.

Customer Sues AD over Promised Patek

A customer has filed a lawsuit in San Francisco against Shreve & Co. a long-standing family jewelry business in the Bay Area. The customer, Ali Rezaei, alleges he was told he could get to the top of a waiting list to buy a highly desirable Patek Philippe Nautilus (Ref. 5980/1R-001) by building up a "purchasing history" of other more attainable watches and jewelry, but he was ultimately unable to buy the watch he coveted.

Rezaei's filing says he followed Shreve's advice and bought a different gold Patek Philippe watch from Shreve for $71,000, a women's diamond-encrusted Patek Philippe for $50,000, a second men's piece for $47,000, and a $53,000 gold and diamond necklace.

What Rezaei was not told, he alleges, is that Shreve & Co. kept dangling the carrot of the $109,000 gold Nautilus if he continued spending, even though the jeweler had been informed by Patek Philippe that it was going to lose its agency due to Patek's plan to cut 30% of its authorized dealers worldwide, including Shreve & Co.

According to documents filed with the San Francisco court, Shreve did not tell its sales associates or Rezaei that it would be unable to sell the Patek Phillipe. Instead, Rezaei alleges, Shreve strung him along to continue to reap additional sales revenue and deprived him of the watch he was promised.

His lawsuit accuses Shreve & Co. of fraud, false promise, breach of contract, and intentional and negligent misrepresentation. He is seeking $500,000 in damages.

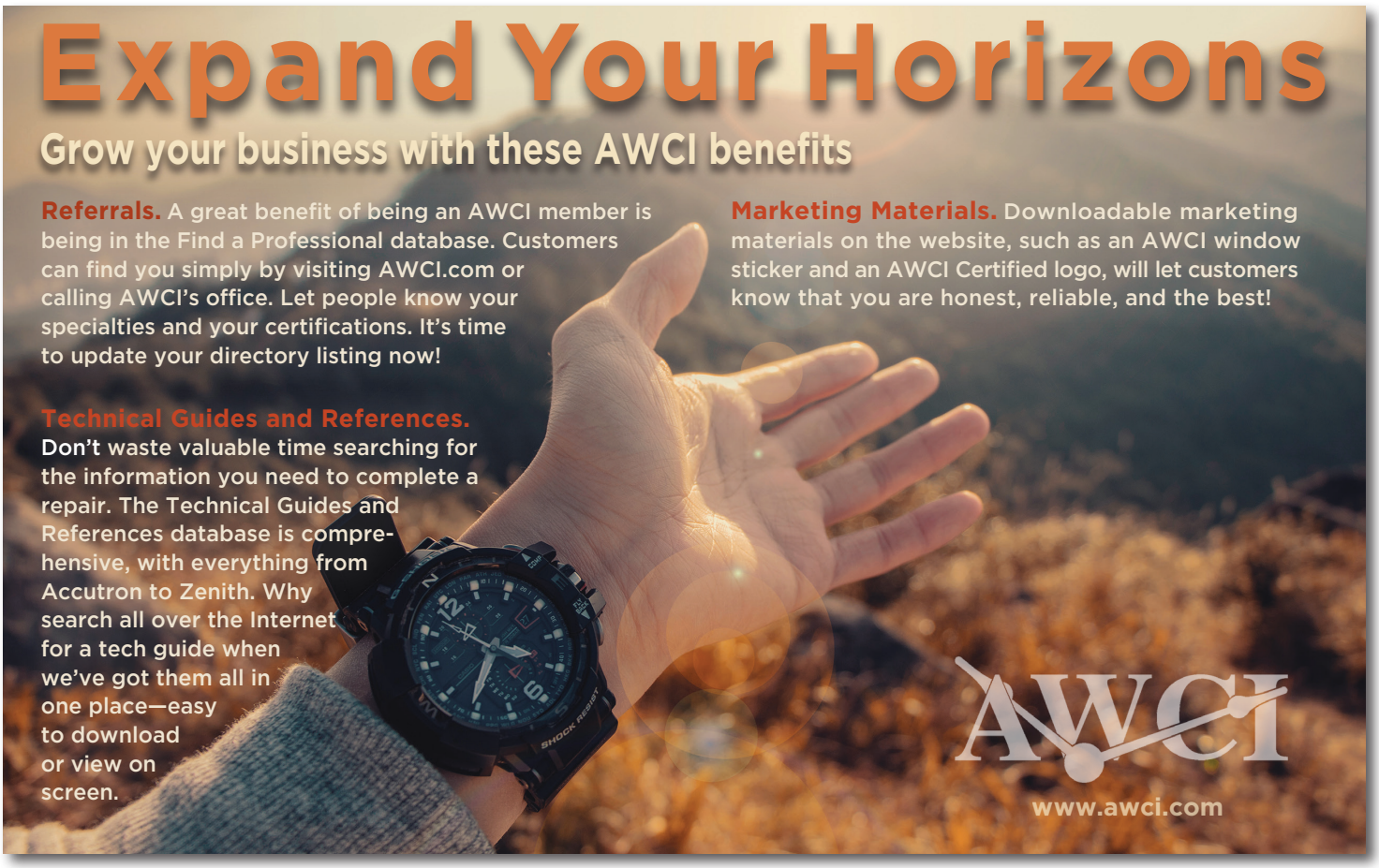
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Donna Hardy is a contributing editor for *Horological Times*.



In Summary

By Donna Hardy

Breitling Appoints Chronext as an Official Service Partner

Chronext, a pre-owned-watch specialist headquartered in Switzerland, employs 20 watchmakers, polishers and other watch experts in its service department. The company will now offer comprehensive maintenance and repair services for Breitling and have access to its specialist tools and spare parts.

Chronext's workshop in Cologne, Germany, will provide servicing, refurbishment and authentication for Breitling watches and issue a two-year guarantee for the work.

"We are very pleased that Breitling, an extremely well-known watch manufacturer, has placed its trust in us and is going into the future together with us," says Philippe Roten, who recently replaced founder Philipp Man as CEO of Chronext.

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Only Watch 2023

Since 2005, watchmakers have been encouraged to use certain colors when designing their unique timepieces for the Only Watch charity auction. This year, however, they have been told to go back through the archives of the past nine auctions and choose colors from any or all previous years. Green has been chosen as a new color this year, an emblem of hope, according to the auction's organizer. The proceeds of the auction go towards research on Duchenne muscular dystrophy (DMD) and other genetic diseases.

Sources

https://www.onlywatch.com/2023collection

https://www.watchpro.com/introducing-the-most-eye-popping-pieces-from-this-years-only-watch-charity-auction/



Hublot's sapphire watch was inspired by Takashi Murakami's iconic smiling flower. At its center is Hublot's first central tourbillon, surrounded by twelve petals set with 444 gemstones.



Piaget's colorful watch sported an ultra-thin Manufacture caliber 1200S1, with skeletonized bridges of green, blue and rose gold.



Jaquet Droz created the Rolling Stones automaton. The musical instruments, hand-crafted from blocks of gold, sit beneath the offset hours and minutes display on a disc colored to resemble a vinyl LP. The scene is surrounded by a second disc that rotates when the pusher is activated, while the iconic Stones tongue rises, falls and moves from left to right.

Donna Hardy is a contributing editor for *Horological Times*.

A Vintage View: Rich's Gruen Watches

By James Sprague

A 20-foot-tall sign adorns the building at 701 Madison Avenue in Covington, Kentucky, advertising "Rich's Gruen Watches," the watch and jewelry store that formerly occupied the space and specialized in Gruen watches, which were produced across the Ohio River from Covington in Cincinnati, Ohio.

The building is now home to a restaurant, Rich's Proper Food and Drink, which opened in 2018 and, as part of their remodeling, restored the vintage "Rich's Gruen Watches" sign, including the neon, as part of the restaurant's effort to revitalize downtown Covington.



James Sprague is the office manager for AWCI and managing editor for *Horological Times*.

Horological Society of New York (HSNY)

The following information was obtained from The Horologist's Loupe, *submitted by Melody Benloss, Recording Secretary & Associate Librarian, HSNY, Copyright ©2023. Published by the Horological Society of New York, Inc.; all rights reserved.*

HSNY "Timepieces for HSNY: 2023 Charity Auction"

The Horological Society of New York (HSNY) held its annual charity auction, "Timepieces for HSNY: 2023 Charity Auction," presented online by Phillips in Association with Bacs & Russo from July 6-11, 2023.

HSNY's annual charity auction, whose sale proceeds benefit the society's ongoing mission of advancing the art and science of horology, featured a variety of wristwatches, a wall clock, and a set of signed books from top watchmaking brands. A 'No Reserve' policy applied to all lots, encouraging auction-goers to bid generously.



The six auction lots for the 2023 HSNY "Timepieces for HSNY: 2023 Charity Auction," of which the proceeds will benefit HSNY educational programs and scholarships.

Lot items from "Timepieces for HSNY: 2023 Charity Auction" included:

LOT 1—F.P.Journe Signed Books. A collection of six brand new and highly coveted books on independent watchmaking, all signed personally by François-Paul Journe. Generously donated by F.P.Journe, sold for $5,334.

LOT 2—H. Moser & Cie. "Streamliner" Wall Clock. A brand-new Aluminum Quartz "Streamliner" Wall Clock. Generously donated by H. Moser & Cie, sold for $5,715.

LOT 3—Oris: Big Crown Calibre 473. A brand-new stainless-steel wristwatch with blue lacquer dial, date, five-day power reserve, warranty and presentation box. Generously donated by Oris, it sold for $4,826.

LOT 4—NOMOS Glashütte: Tangomat GMT Plus Glass Back. A brand-new stainless-steel world time wristwatch with GMT indicator, date, warranty card, setting pin and presentation box. Generously donated by NOMOS Glashütte, it sold for $5,080.

LOT 5—Jaeger-LeCoultre: Reverso Classic Medium Thin. A brand-new stainless steel reversible wristwatch with warranty and presentation box, and complimentary personalization on the reverse side of the case through Jaeger-LeCoultre's Reverso Engraving Services. Generously donated by Jaeger-LeCoultre, it sold for $5,080.

LOT 6—Laurent Ferrier: Bridge One. A brand-new stainless steel rectangular-shaped wristwatch with certificate and presentation box. Generously donated by Laurent Ferrier, it sold for $24,130.

"We're excited to be offering six incredible lots for our 2023 auction," said Carolina Navarro, HSNY deputy director. "Thanks to the generosity of our donors and the talents of Phillips, we hope to raise as much money as possible to meet our mission and provide financial aid to watchmaking students."

Paul Boutros, Phillips' deputy chairman and head of watches, Americas, adds, "We are honored and delighted to once again support HSNY's efforts that continue to advance watchmaking science and culture in the United States. One hundred percent of the proceeds from the sale of each watch, including Phillips' buyers' premium, will benefit HSNY's educational programs, scholarships, and watchmaking school awards."

In April 2023, HSNY held its annual Gala & Awards Ceremony—a tradition that dates back to the society's start in 1866—where Phillips' Watches head of sale & international specialist, vice president Isabella Proia auctioned off the Society's 2023 lifetime membership card for a record-breaking $20,000. Thanks to the success of last year's auction, HSNY also awarded $125,000 in financial aid to 20 watchmaking students and four US watchmaking schools during the gala.

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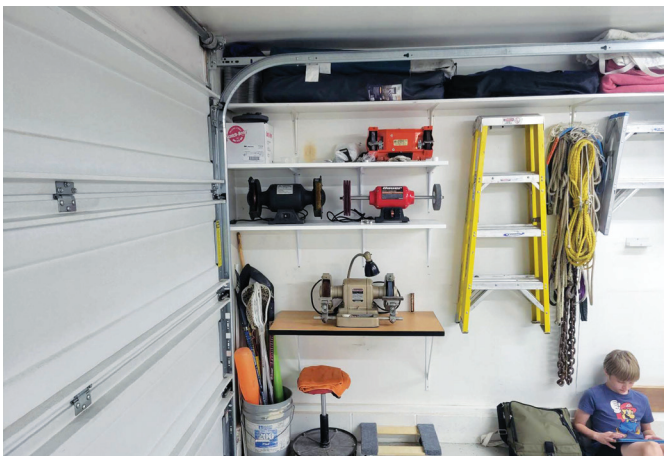
Minnesota Horological Society (MHS)

The Minnesota Horological Society met July 6 at the Hopkins Pavilion in Hopkins, Minnesota, with a program on clock case and furniture repair and refinishing given by John Schumacher.

The June meeting, which included a visit to Erik Grund's workshop at his residence to see his tooling and equipment, along with a demonstration



View of some of Eric Grund's clock collection in his garage workshop along side his large air compressor and ceiling mounted heat pump.



Eric's grinding area with one shelf to hold machines used, then swap grinding, buffing, and polishing motors on shelves as needed.



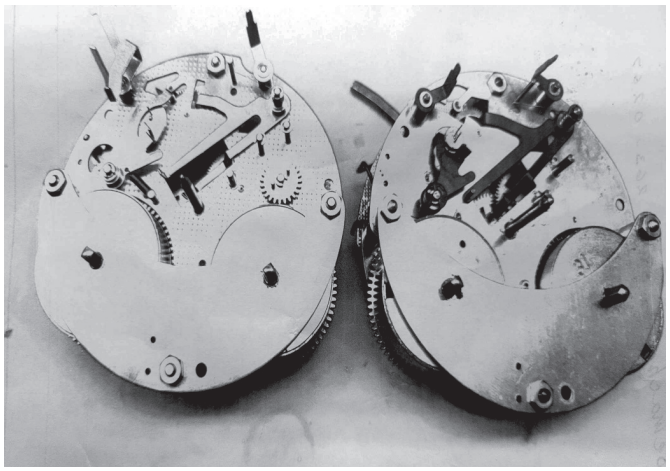
Eric's clock repair bench area with lube and tools above and hit and miss engines and parts stored below.



Eric shared his method of aligning the drill press table to the chuck using a Wixey digital angle gauge and dial indicator.

of his method for aligning a drill press spindle to the table, was recapped and minutes from the June meeting were approved.

The June meeting included a show and tell portion, where Steve Josul shared his 1912 brass Hudson eight-day rim wind car clock with second hand, Richard Zielike shared a Hermle ship's bell movement with an extra lever on the cam to strike at a quarter before the hour, and Garth Antila shared a Lunar Tide clock with a quartz movement.



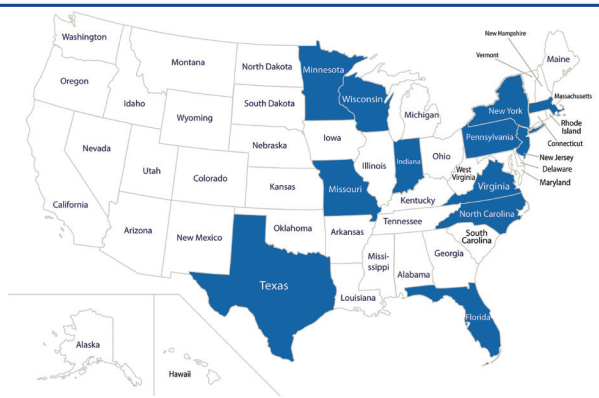
Sam Burns shared two statue clocks, one an Ansonia and the other a New Haven; each with its own problems.



Steve Josul shared a 1912 brass Hudson rim wind car clock with second hand. Made by Phinny Walker.

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President's Message (cont. from page 5)

wisdom, too. In the process of a just a few minutes of conversation, he saved me countless hours of frustration on just one project I hope to tackle in the next couple years. I hope I can return the favor to him in kind, but if not, it will be returned through the dissemination of my expertise to someone else, and the circle will eventually close with him gaining from his giving indirectly.

Quite frankly, I do not believe that anyone who sits at a bench for a living would not be refreshed by a conversation with Denis, and I believe that this is the case for countless others, too. We must get together more, and this leads me to remind everyone to come to the AWCI Fall Symposium, which will center around these types of conversations as well as practical educational segments.

I could write a 10-page article on what I saw at this meeting and why it left me energized, but I'll just add one more thing that really excited me. That was Jacob Curtis's entry into the crafts contest. Jacob has been chronicling his journey down this road on Instagram and had a good number of us excited to see the result. He did not disappoint and landed not only the blue ribbon for single train clocks but the "People's Choice" trophy as well. He deserved it. He applied the finish techniques from his watch training to a full-size, jeweled regulator clock. As many of you know, the finish work between watch parts and larger clock parts does not increase in a linear fashion but exponentially—just ask him. To see such large parts with such incredible finishes is astonishing, and his command of proportion and design was astonishing as well. This brings me back again to the AWCI Fall Symposium, as Jacob has agreed to present his work at the meeting, and if things go right, he'll bring one of his movements to display.

As Bob Dylan said, "The times they are a-changin'." Indeed, they are, and if we're going to continue to grow our membership, we must change also. To see it already happening, and AWCI going in a forward direction that will be more and more relevant to its members is delightful; to be a part of it is a privilege. To all of you who made this past weekend so encouraging, thank you, and I apologize for not being able to mention everyone. There were so many hands in making it a success it would be impossible to mention you all, but I am grateful nonetheless.





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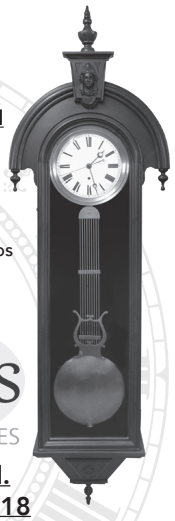
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Registration is now open for the 2023 AWCI Fall Symposium at AWCI headquarters outside of Cincinnati, Ohio, September 28-30.

The event will feature three days of horological fellowship, networking and education—not to mention great food! Registration costs cover all educational seminars, refreshments and meals during the three-day event!

The AWCI Fall Symposium Committee is currently finalizing the remainder of the educational seminar and activities schedule. More presenters have been added to the slate of speakers, including AWCI member Bob Ockenden, CMC, who will be giving his seminar on "The Quest for Accuracy."



Joining Ockenden as seminar presenters will be AWCI member and clockmaker Stu Lord; watchmaker Phillip Peck; AWCI member, watchmaker, clockmaker and micro-machinist Jacob Curtis; AWCI Education Director Jason Champion, CW21; AWCI member and clockmaker from Chelsea Clock, Nick Butt; AWCI president and clockmaker David Lindow; NAWCC Executive Director Rory McEvoy; and Robert Cheney of the Willard House and Clock Museum.



AWCI is also working on a few other surprise presenters for the Fall Symposium, so stay tuned for more!

The first night of the event will feature a welcome reception where attendees will have the opportunity to mingle and meet while enjoying some light food and drinks. The symposium will then kick into high gear on the second day, with a full schedule of educational seminars for attendees, committee meetings for AWCI committee members, lunch courtesy of the renowned Izzy's World Famous Reubens—a Cincinnati institution for more than 120 years—and a dinner provided by The Brau Haus Restaurant of Oldenburg, Indiana.

Day three of the symposium will feature even more educational seminars, along with a lunch courtesy of Tortilleria Garcia of Cincinnati and dinner thanks to the award-winning Velvet Smoke BBQ of Cincinnati. It will also include the annual AWCI Board of Directors meeting, along with the swearing in of the newly elected board members and installation of AWCI officers for the 2023-24 year, and a few other surprise activities!

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If you have any questions, feel free to reach out to Jason Champion, our education director, at education@awci.com or at 513-367-9800, ext 303. To register, contact AWCI Office Manager James Sprague at james@awci.com or at 513-367-9800, ext. 301.