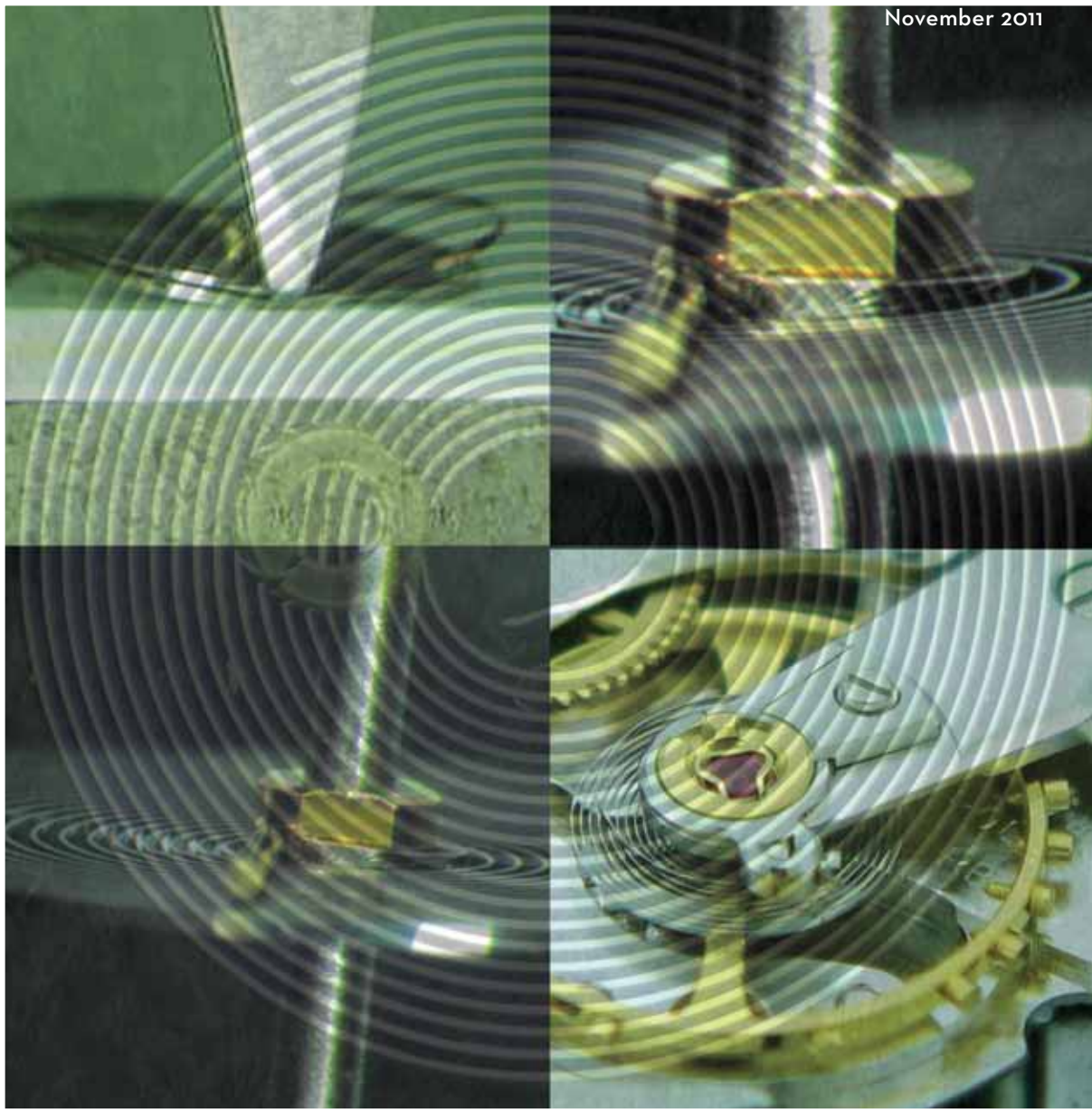
HOROLOGICAL TIMES™

ADVANCING THE ART, SCIENCE & BUSINESS OF HOROLOGY

November 2011



AMERICAN WATCHMAKERS-CLOCKMAKERS INSTITUTE

This Month's Focus: *Technical Insights*

How to Safely Store and Transport Batteries

Time-Saving Shop Aid for Clockmakers

Building the Overcoil Hairspring and Timing Results

Tips for Working with the Rolex 300 Clasp Pin

Industry News

Official Publication of the American Watchmakers-Clockmakers Institute

EDITORIAL & EXECUTIVE OFFICES
American Watchmakers-Clockmakers Institute (AWCI)
701 Enterprise Drive
Harrison, OH 45030
866-FOR-AWCI (367-2924)
or 513-367-9800
Fax 513-367-1414
awci@awci.com • www.awci.com

Amy S. Dunn
Managing Editor & Advertising Manager
Ext. 307 adunn@awci.com

James E. Lubic, CMW21
Executive Director/
Education & Technical Director
Ext. 310 jlubic@awci.com

Thomas J. Pack, CPA
Operations Director
Ext. 311 tpack@awci.com

Thomas D. Schomaker, CMW21
Watchmaking Instructor/
Certification Coordinator
Ext. 309 tschomaker@awci.com

Daniela Ott
Education Coordinator
Ext. 303 dott@awci.com

Jennifer Bilodeau
Assistant Editor/
Marketing Coordinator
Ext. 302 jbilodeau@awci.com

Jim Meyer
IT Director

HOROLOGICAL TIMES ADVISORY COMMITTEE
Ron Iverson, CMC: Chairman
Karel Ebenstreit, CMW, CC21
David Fahrenholz
Jordan Ficklin, CW21
Chip Lim, CMW, CMC, CMEW
Robert D. Porter, CMW
Manuel Yazijian, CMW21
Ron Landberg, CW21

Reprinting and reproduction is prohibited without written permission from the American Watchmakers-Clockmakers Institute. Copyright ©2011 by the American Watchmakers-Clockmakers Institute.

Horological Times (ISSN0 145-9546) is published monthly and copyrighted by the American Watchmakers-Clockmakers Institute, 701 Enterprise Drive, Harrison, OH 45030-1696. Subscription price for the public is $137.00 per year ($8.50 per copy). Members subscription is $70.00 which is included with annual dues of $137.00. Periodicals postage paid at Harrison, OH 45030 and additional entries. POSTMASTER: Send address changes to Horological Times, 701 Enterprise Drive, Harrison, OH 45030

IN THIS issue

VOLUME 35, NUMBER 11, November 2011

features

How to Safely Store and Transport Watch Batteries for Recycling
Henry Kessler
pg. 6

From the Workshop
Jack Kurdzionak, CW21
pg. 10

technical discussions

A Time-Saving Shop Aid for Clockmakers
Robert Porter, CMW
pg. 12

Building of the Overcoil Hairspring and the Timing Results, Part 1
James P. Borton
pg. 14

Tips for Working with the Rolex 300 Clasp Pin
Jordan Ficklin, CW21
pg. 22

Questions & Answers
David Christianson
pg 24

industry news

LVMH Watches and Jewelry Division Posts 26% Growth

Chelsea Clock Announces Two Appointments
pg. 28

awci news

President's Message
Doug Thompson, CW21
pg. 2

Executive Director's Message
James E. Lubic, CMW21
pg. 3

Affiliate Chapter News
Wes Grau, CMW21
pg. 26

education & certification

New AWCI Advanced 21 Classes & Certification Exam Schedule
pg. 29

classifieds

Buy Sell Trade
pg. 30

Advertisers' Index
pg. 33

New Classifieds Rates & Policies
pg. 32

© canstock photos inc/ginasanders
© canstock photos inc/Andres

Editorial material and letters of opinion are invited, but reflect the opinions of the authors only and do not represent the views of the American Watchmakers-Clockmakers Institute (AWCI), its directors, officers or employees. AWCI reserves the right to edit all submitted materials and is under no obligation to accept any submitted materials for publication. The appearance, reference, or advertisement of any product or service in this publication shall not be deemed an endorsement of such products, methods or services by AWCI, its directors, officers or employees.

Selections from Horological Times. Become a member to receive this monthly magazine (Go to: JOIN)

High Time for Denver!

August 1-5th, 2012

We're on our way to the "Mile High City," where the air is clean and the mountains are "pretty!"

Yes, we're taking the 2012 annual convention and educational symposium to new heights! For the convenience of attendees and vendors, we have also made several schedule changes. The business meetings of our various governance committees will now take place on the first two days (Wednesday and Thursday). Friday, Saturday and Sunday will be devoted to the educational seminars, the vendor fair, the ELM Trust off-site dinner and our awards banquet. A Sunday Swap Meet is also being considered.

Our meeting planner has chosen a great hotel with convenient transportation around the area. More information will be included in upcoming *Horological Times* magazines, as well as on the new AWCI website, and of course, on AWCI's Facebook page. Remember, the business portion of your trip can sometimes be tax deductable.

We will also offer the popular off-site day for spouses, so think of this as a possible business/vacation combination. It's time to plug the dates of August 1-5, 2012 into your calendar and prepare for the time away from your shop/work. And be sure to take advantage of early registration when it is announced.

Take it from someone whose birthday is in August... the date comes more quickly as the years go by!

Terry Kurdzionak



Plan Your Holiday Shipping Now. Then Relax.

Life can get hectic over the holiday period. The FedEx 2011 holiday shipping website can help! You'll find holiday shipping news, including days and hours of operation, exceptions to the money-back guarantee* and last days to ship for timely holiday delivery at fedex.com/holiday.

Nervous you'll spend a fortune getting your packages there on time? Don't be. And, as an AWCI member, you can save up to 29% on your FedEx Express® shipping (includes a 5% electronic shipping discount) and up to 20% on your FedEx Ground® shipping. Best of all, these are year-round savings. Join the AWCI Freight Savings Plan today and start saving. For more information, go to www.siriani.com/awcifsp or call our service provider Siriani at: 800-554-0005.

For details on the FedEx Money-Back Guarantee, see Our Services at fedex.com. For eligible FedEx® services and rates, contact your freight savings program provider, Siriani & Associates. All FedEx shipments are subject to the applicable FedEx Service Guide. *FedEx service marks used by permission.*



BY JAMES P. BORTON

Building of the Overcoil Hairspring and the Timing Results, Part 1

Many modern watch manufacturers produce movements that utilize flat hairsprings with regulating pins. These watches perform well and are becoming more common than watches with overcoil hairsprings. This trend is no surprise as technology is producing improved alloys for hairsprings and balances, at lower cost, and they are less affected by temperature changes than in the past. Also, the manufacturing cost of hand-formed overcoil hairsprings is far higher than the flat alternative.

This study will first give a brief explanation of the differences between overcoil and flat hairsprings. Next, the overcoil will be assembled step by step. Finally, the overcoil will be shown to be a more isochronous oscillator than the flat hairspring through timing analysis in the same watch.

The coils of a flat hairspring lie in a single plane which includes the vibrating point near the regulating pins and pinning point at the stud. The gaps between the regulating pins and the hairspring are very small. When oscillating, the hairspring is only briefly away from either regulating pin beginning just before the dead point and ending just after the dead point. This means the hairspring has an effective vibrating point just behind the regulating pins toward the stud. In fact, the vibrating point is at the regulating pin (when touching a pin) and at the stud (when not touching a pin). The effective vibrating point is just an average between the two actual vibrating points determined by how much time is spent on each while oscillating.

Amplitude decreases in the watch with dropping torque as the watch runs down. With lower amplitude the oscillator moves more slowly through the lift angle where the vibrating point is at the stud. This longer time with the vibrating point at the stud causes the oscillator rate to slow, resulting in a loss. This loss is typical in watches with regulating pins. The amount of the loss and amplitude range where it occurs are affected by the space between the regulating pins. Close regulating pins will show a small loss starting at lower amplitudes as the watch runs down. In contrast, wide regulating pins will show a greater loss starting at higher amplitude with the loss increasing more sharply as amplitude drops farther. For this reason regulating pins are an “enemy of isochronism” and must be kept close to minimize their effect on rate.

When the hairspring “breathes” its natural vibration has it expanding outward and contracting inward evenly around its axis as viewed from above the balance bridge. This is not possible with a flat hairspring as the outer coil is pinned at the stud and trapped between the regulating pins. When vibrating outward, the outer coil opposite the regulating pins/stud expands farther away from the axis than the fixed regulating pins/stud. This carries the hairspring center of gravity off the axis in the same direction. Conversely, when vibrating inward, the point opposite the regulating pins/stud contracts farther in towards the axis than the fixed regulator pins/stud. This carries the hairspring center of gravity off the axis towards the regulator pins/stud. This effect would still be seen even without the regulating pins, as the hairspring is pinned at the stud.

This oscillating poise error of the hairspring causes gains and losses according to position and amplitude. It also applies ever-changing radial force on the balance staff that translates into varying friction between pivots and jewels, depending on amplitude and position. Both errors caused by a changing hairspring center of gravity have a destabilizing effect on rate and are also “enemies of isochronism.” Furthermore, additional errors related to regulating pins, such as an off-center hairspring between regulating pins or non-parallel regulating pins, have a negative impact on isochronism through the amplitude and position range.

In 1795 Abram-Louis Breguet came up with a solution to many of the rate problems inherent to flat

Selections from Horological Times. Become a member to receive this monthly magazine (Go to: JOIN)

BY JORDAN FICKLIN, CW21

Tips for Working with the Rolex 300 Clasp Pin

Watchmakers who work on Rolex pieces every day are most likely intimately familiar with the new bracelet and clasp designs. For those watchmakers who only perform occasional repairs, however, there are a few things to know about the new design.

The older stamped clasp design was a very simple design that was very easy to adjust and repair, and it worked flawlessly for decades. The new design (300 series) is more complicated, extremely sturdy, and is sure to work for even longer. Should you need to disassemble one of these clasps, be sure to take careful note of how the pieces are arranged, as it can be a little frustrating to reassemble one of these.

The biggest construction change (aside from the machined body) is that components not held together by a spring bar are held together by a friction pin with a star-shaped head. Evidence of this is extremely difficult to detect even under high magnification. The pin grips very tightly and it requires a lot of force to remove it. In addition, removing it the wrong direction will cause significant damage. The best case scenario would be the pin enlarging the hole, preventing the use of a factory pin to reassemble the bracelet. Worst case scenario will result in the tongue of the clasp breaking off. In fact, the pin is in there so tight that if you don't properly support this tongue, you can actually snap it off when punching out the pin.

The star-shaped portion of this pin is located on the same side of the bracelet as the 9 o'clock position of the dial when it is attached to the watch. This will be the bottom of the clasp when the clasp is open and positioned so that the Rolex logo is upright and facing the watchmaker with the blades on the left, and the body of the clasp is to the right. You should drive the pin out from the 3 o'clock side of the bracelet towards the 9 o'clock side with the tongue of the blade firmly supported.

I have found this task to be very difficult with a normal bracelet pin punch and plastic block. In my experience, this pin is so tight that a stainless or blued steel pin will bend or break. When removing this pin I use a large, flat stump in my staking tool positioned just off to one side of a straight 1.0mm straight stake (Figure 1). The sturdiness of this stake is very effective in driving out the pin. I support the blade of

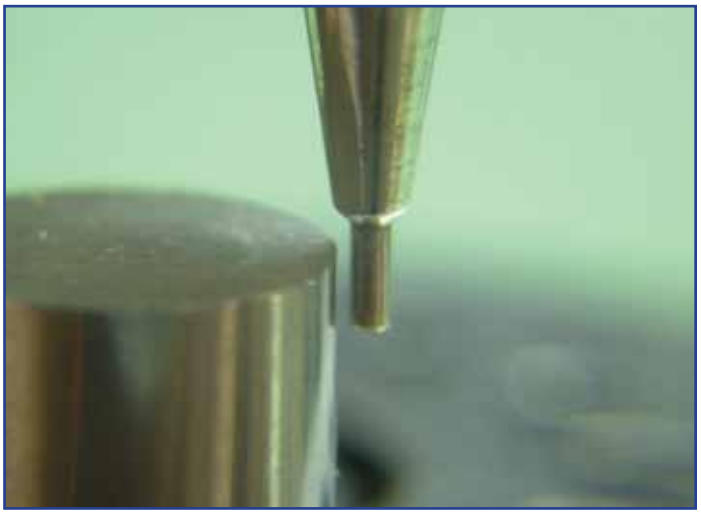


Figure 1

the clasp on the stump and drive out the pin using the stake (Figure 2). If you are using a stump with a polished surface, you should protect it with a vinyl sheet. (Whenever you use hardened steel tools, it is a good idea to wear safety glasses and to take great care). My straight stake is long enough and allows just enough clearance so that the pin can be driven out without any risk of bending or breaking the stake (Figure 3). If your stake has a faster taper



Figure 2

tips for working with the rolex 300 clasp pin

BY JORDAN FICKLIN, CW21

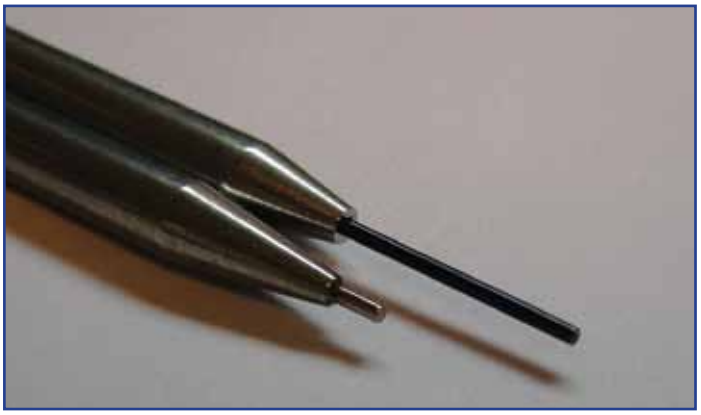


Figure 3

you may not find you have adequate clearance to perform this operation (Figure 4). You could alternately use a blue steel pin inserted into a flat stake with a hole, but it may bend or break. To reassemble the bracelet, follow the reverse procedure. You only need to move the pin until the star-shaped portion is free. It will gently push out once that connection is broken. ♦



Figure 4

BULLETIN BOARD SEPTEMBER 2011

Looking for Claude Reeve Original Clocks or Clock Designs

Claude B. Reeve of Hastings made at least 50 original clocks. One of his notable early models was the "Model Engineer Musical Clock" (1956).
J. Malcolm Wild, FBHI, is looking for any of the Reeve originals—or to speak with anyone who has constructed clocks from Reeve designs. This information is needed for a clock he is working on currently. (Please contact AWCI with your information.)

Need Parts List for Bulova Accutron 2186

Member Charles Burnett is searching for a parts list for 2186 with part numbers and any technical bulletins relating to removal and replacement of dial disks. Observation (without further disassembly) indicates the dial side differs little from other models with the exception of a bridge that supports the long dial side center wheel.

Please Help Identify this Movement

A member would like help identifying the vintage movement pictured below. It is from an 8-day wristwatch, the plate diameter being 30.4mm. He also needs to locate a center wheel to suit.



Please contact the *Horological Times* assistant editor if you can assist with any of these parts: jbilodeau@awci.com 866-367-2924, ext. 302.

DID YOU KNOW? You can get immediate feedback for the parts and info you need on the *AWCI Technical Discussion & Parts Forum*? Just go to www.awci.com and sign up to participate.

questions & answers

BY DAVID CHRISTIANSON, CMW21, FAWI

QUESTION:
I have a Geo Bransgrove London Pocket Watch and would like more information on it. I am assuming it is from the 1700s, but am unsure as I can find no further information regarding this watch.

Jonathan Morales,
Olympia, Washington



ANSWER:
The hallmark in your watch case tells us that the case was made by Thomas Bligh & William Linsley of 16 Great Sutton Street in Clerkenwell (WL/TB mark) in 1799 (the letter D mark). The case was assayed as sterling silver (the lion passant mark) at the London Assay Hall (the crowned leopard mark).

The movement is a common verge/fusee movement of the period with the equally common Tompion regulator and a rather whimsical grotesque mask engraved on the balance cock. As with most verge/fusee movements of the time, the movement has no pivot hole jewels.

The signature "George Bransgrove of London" does not appear in any of the lists of London watchmakers, which leads me to believe the signature is that of the retailer, wholesaler or distributor of the watch.





CHRONOS

IF YOU LOVE WATCHES,
YOU'LL LOVE CHRONOS

❑ $22.50 – One year
❑ $42.00 – Two years
❑ $60.00 – Three years
Foreign subscribers add $32.00 per year. (U. S. Funds drawn from U.S. bank only)
❑ Check or money order enclosed
❑ Charge my Visa or Mastercard
Card No._____
Exp. Date_____ V Code_____
Signature_____
Phone_____
Name_____
Address_____
City_____ State_____
Zip_____Country_____
Company Name_____
Type of Business_____

Chronos Magazine is published 6 times per year for the connoisseur of luxury timepieces. Each issue presents the finest watches and clocks of today as well as exploring premier vintage collections.

www.chronosmagusa.com

SEND TO: SUBSCRIPTION DEPARTMENT,
2403 CHAMPA ST., CO 80205 CALL US AT 303.296.1600

BY DAVID CHRISTIANSON, CMW21, FAWI

This is an intriguing account provided by the author of this regular column.

QUESTION:
An apparently English pocket watch by Thomas Russell & Son came across my bench recently that reflects an interesting story.

David Christianson,
Kendallville, Indiana

ANSWER:
Thomas Russell is listed as a watch manufacturer in 1848 and became arguably Liverpool's finest watchmaker at the time. In 1859 his sons, Thomas Robert and Alfred Holgate, joined the firm and the name changed to Thomas Russell & Son. In 1867, the firm split into two enterprises: Thomas Russell & Son, as a watch & chronometer manufacturer, as well as a wholesaler and importer of Swiss watches; and Russell, Ltd., as a retail jeweler. By 1870, they were both listed as makers to the Queen. By 1938, the watch firm became known as Thomas Russell Son Watch Company, Ltd. In 1994, both the retail side and the watch trade side of the original company closed their doors for the last time.

The movement in this watch turns out to be made by the Buren Watch Company of Buren, Switzerland (1932-1966). More specifically, it is a 43 millimeter (16-size) caliber 690, Model VN, specifically made to fit into an American case. According to La Classification Horlogere, it was in production in the 1930s. The watch movement is cased in a yellow gold-filled hunting case made by the Illinois Watch Case Company of Elgin, Illinois (not related in any way to either the Illinois Watch Company or the Elgin Watch Company). The case was embossed with the signature, "Thomas Russell & Son," by the case company for the firm of Thomas Russell & Son. The dial and movement are clearly marked "Swiss made." But this was not always the case with English-imported Swiss watches. With this information I can date this watch in the mid-1930s.

Times changed between the turn of the century and the 1930s when quality Swiss-made movements became more acceptable in England as the English watchmaking industry began its decline. To illustrate this change of attitude we can look at H. Williams, Ltd., of London. In 1916 H. Williamson, Ltd., a watch wholesaler/manufacturer advertised that they owned a watch factory in Buren, Switzerland, making the factory in Buren the only Swiss watch factory under English ownership and therefore they could claim that their watches were English-made watches (instead of Swiss imports, as they actually were). Alan Shenton reported in *Pocket Watches: 19th & 20th Centuries*, that even with this justification, they were still "accused of contravening the Merchandise Marks Act by using Swiss-made parts in their 'English-made' watches. They lost the case, details of which made feisty reading in the Horological Journals" at the turn of the century. H. Williamson, Ltd., of London owned the Buren watch factory from 1898 to 1932 at which time it became the Buren Watch Company.







Selections from Horological Times. Become a member to receive this monthly magazine (Go to: JOIN)