



Chrono Times

NAWCC Chapter 190 Newsletter

Ventura and Santa Barbara Counties
September/October 2015

PRESIDENT'S MESSAGE BY GEORGE GAGLINI

Chapter 190 continues to grow with greater enthusiasm and purpose in promoting interest in clocks and watches and all things horological. One of those of course is the Santa Barbara County Courthouse clock which had a malfunction that was quickly and efficiently remedied by the Chapter 190 team. It is up and running again thanks to the skill and efforts of Ernie Jenson, Ken McWilliams, George Antinorelli, Rodney Baker and many others who provided the loving care (and newly fabricated escapement components) this stately old clock deserves.

(Continued on page 4)

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TALES FROM THE BENCH BY FERDINAND GEITNER

The Too-Fast Melody

One complaint about chiming clocks tends to be that the chimes and melodies speed up as they go through the motion. I recently serviced a German 1/4 chime movement which was operating beautifully. (I tend to test run them for a week at least.) Suddenly, on the third day, the 1/4 chimes suddenly sped up to the point that one could not recognize the tune. This can be dangerous to the mechanism as the locking cam hits the stop so fast that it can bend or break things.



Fig. 1 Steel "finger" friction spring integral to governor

"These issues are normally controlled by the governor."

MEETING CALENDAR

20 SEPTEMBER

MAKING YOUR OWN TOOLS

by Ray Marsolek

18 OCTOBER

THE SANTA BARBARA COURTHOUSE TOWER CLOCK

by Rodney Baker

Another effect is that the chime (or strike) keeps on going and going and going..... due to the speed of the cam hitting the stop so violently that it knocks the locking lever out of its locking position again and again.

These issues are normally controlled by the governor. Its function is to provide drag to slow down the gear train while spinning through the air. The friction of the spring finger on the shaft provides sufficient coupling to the governor plate to cause it to spin.

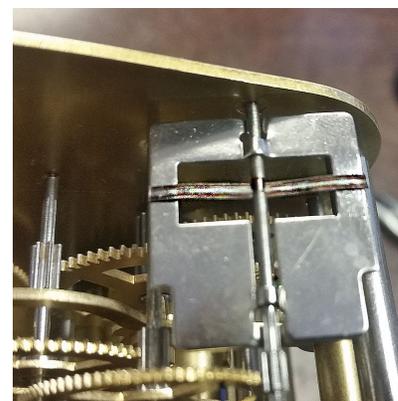


Fig 2 "Finger" friction spring replaced by watch spring

But this friction must not be so great that the moment of inertia (see related story in this issue) of the governor would transfer damaging shock to the drivetrain during the sudden stop at the end. So, there is a fine balance between providing drag to keep the speed in check and preventing damage during deceleration.

These governors are not perfect however. They tend to spin faster after a full wind and slow down somewhat during the week. Some governors include spring loaded weights to control speed more accurately throughout the week. Some can be adjusted to catch more or less air to play the melody at a nice (or correct) speed. Interestingly enough a repair person came to my shop a few days ago with a similar problem and someone had added

some solder at the edges of the governor trying to slow it down.

The problem on this movement was that the “steel” governors were made of soft material so there was no elasticity in the so called friction spring finger which was part of the governor’s body and so it was impossible to tighten it to improve its function. See Figure 1. The drastic solution was to remove the “spring” (break it off) and replace it with a real spring (part of a broken pocket watch spring) which will give many more years of service. See Figures 2 and 3. I keep old broken parts for just such occasions as spare material sources.

Happy melodies

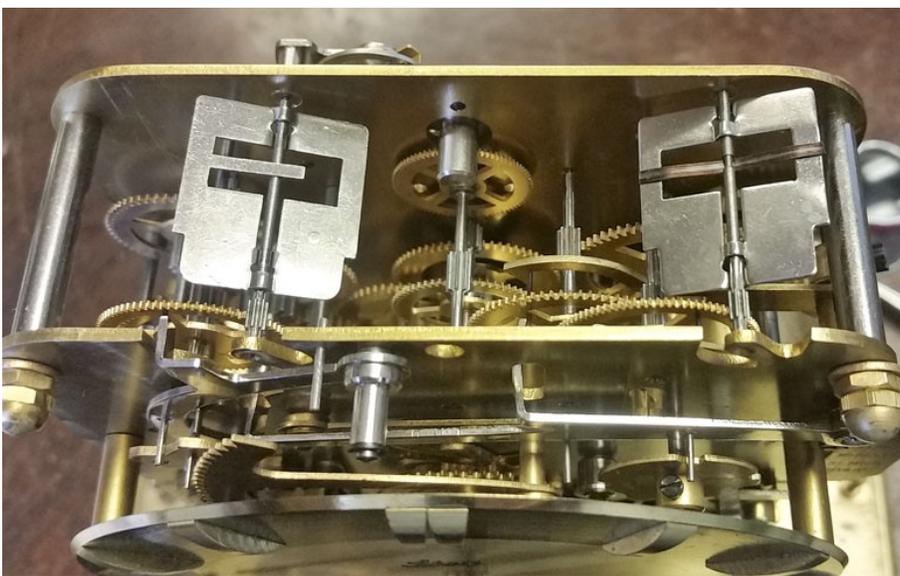


Fig 3. Completed clock movement with repaired governor

THIS MONTH'S MINI WORKSHOP



Starts At 11:00 AM and led by George Antinarelli. This is an open forum workshop, so bring your problem clock or watch and let the group help you.

MEETING LOCATION

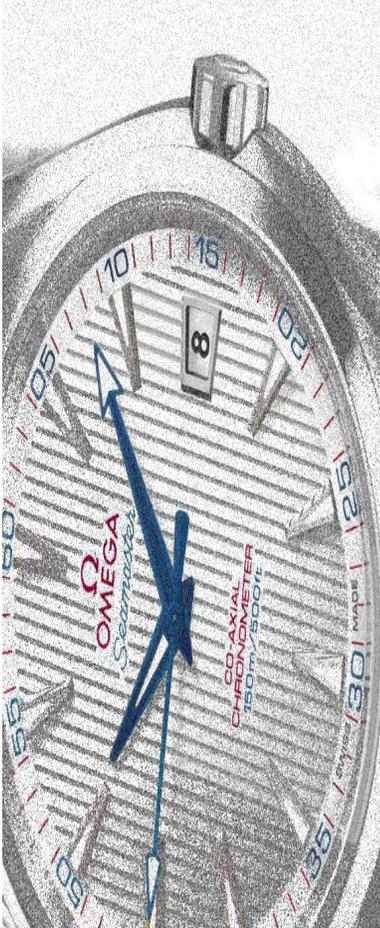
Chapter 190 meetings are held the third Sunday of the month (except Dec.) at Ventura College in the Campus Student Center.

Sellers may start setting up at 11:30.

The Mart is open from 12:00 to 1:15.

The meeting starts at 1:15.

PRESIDENT'S MESSAGE CONTINUED FROM PAGE 1



Several changes and additions have been made to the Chapter 190 Board of Directors including some new categories. Mark Harmeling will be assuming the duties of Photographer, Pat Fitzgerald will be taking care of our audio-visual needs, Walter Pickett will be writing biographies for the Chrono Times which will have a new Editor, David Perez. Sue Gary has become the new Chapter 190 Secretary while Dave Coatsworth will be the new Second Vice President. As of January 1, 2016, Matt Bonacorso will be the new Director of Programs. I want to welcome Mark, Pat, Walter, David, Sue, and Matt to the Board and I look forward to working with all of them and Ken McWilliams as he prepares to take over the office of President on January 1, 2016.

“...and Ken McWilliams as he prepares to take over the office of President on January 1, 2016.”



ELGIN "C.H. HUBBARD"
Grade 446, 12 Size, 19
Jewels, 1927

4

THE ELGIN WATCH COMPANY BY DAVE COATSWORTH

- The Elgin watch Company produced its first watch, the B.W. Raymond in April of 1867.
- By 1873 they had sold over 100,000 watches.
- The depression in 1874 forced lower production and the price of the B.W. Raymond watch was reduced from \$69 to \$40.



- By 1879 the economy recovered and production increased to 100,000 units per year.
- Between 1883 and 1890 production increased to 1600 units per day.
- Between 1902 and 1905 there were 3200 employees producing over 2700 units per day.
- Between 1907 and 1912 the automobile was now competition for discretionary income. And unfortunately, jeweled watches were not wearing out.
- World War I ensues and the wristwatch becomes popular with soldiers
- By 1926 Elgin employed 2170 men and 2200 women and produced 1,000,000 watches per year.
- The Depression hits hard and employment drops to 480 people in 1933.
- Recovery begins in 1934 and by 1937 the Lord Elgin and Lady Elgin are introduced.



ELGIN
CONVERTIBLE
Grade 91, 16 size, 21
Jewels, 1881

“By 1926 Elgin employed 2170 men and 2200 women and produced 1,000,000 watches per year.”

- World War II starts and Elgin supplies military watches, chronometers, altimeters and sapphire bearings.
- Introduces the first American automatic watch in 1950 and by 1951 produced their 50,000,000th watch.
- In 1968 the last domestically produced watch was made.



LORD ELGIN
Circa 1946



Happy Birthday

September

THOMAS BEARD

THOMAS FERKEL

PAUL HIGHFILL

CHRIS MANZIONE

DAVID RUBRIGHT

CHIP STEVENS

NORMA ZUBER

October

BRUCE BIERSBORN

ROD CHRISTEL

LARRY LOPES

MARCO PEREZ

DENISE RODRIGUEZ

BIOGRAPHY: RON AND JULIE PALLADINO

Over forty years ago Ron and Julie Palladino made the decision to leave their corporate jobs and begin restoring and selling antique clocks out of a tiny storefront in West Los Angeles. As their exposure to quality clocks increased, their thirst for knowledge intensified and their unbridled passion became a driving force in their personal and business lives.

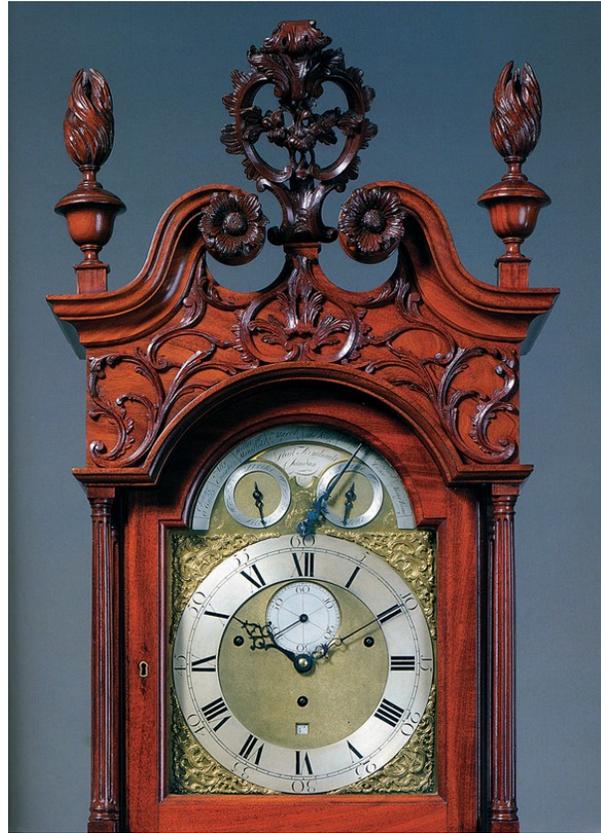
In 1976 the Palladinos relocated their business to Solvang in the beautiful Santa Ynez Valley. Within a few years they had founded the Solvang Antique Center, an 8,000 square foot collective featuring 65 dealers from across the country, adding numerous specialty categories to their growing list of offerings.



ABOVE Palladinos set a new world record at Sotheby's New York Americana Auction with the sale of an important musical clock by Paul Rimbault— a pre-Revolutionary War-Period Roccoco Tallcase Clock playing eight musical tunes on a nest of thirteen bells. Its first owner was obviously a Loyalist, as one of the tunes it proudly played was "God Save the King".

As a result of their location in a tourist town with over three million visitors a year, Ron and Julie had the unique opportunity to expose a multitude of people to antiques previously unknown to them. The Palladinos eagerly shared their knowledge and created a hands-on environment for visitors of all ages, with the magical sounds of clocks, music boxes, singing birds and pianos nearly always in evidence.

Thousands of people over the years experienced serious antiques for the first time in Solvang and became infected by the Palladinos' passion and enthusiasm. Some purchased an item spontaneously upon their very first exposure, others became regular visitors first, spending hours learning about clocks before finally acquiring one, a few, or even dozens over the forty years of entertainment, education and opportunity this unique business has offered travelers from around the globe.



Closeup of the Rococo Tallcase Clock

When Julie was a teenager her parents began collecting antique clocks. Before long she was helping them source clocks for their collection, and in the process bought the first one for herself when she was 14. When Ron and Julie met in Los Angeles in 1972, Ron became exposed to antique clocks for the first time. Always mechanical and inquisitive by nature, it wasn't long before he too was thoroughly enmeshed in the tantalizing field of horology. (continued on page 8)

RON AND JULIE PALLADINO (CONT.)



Ron Palladino

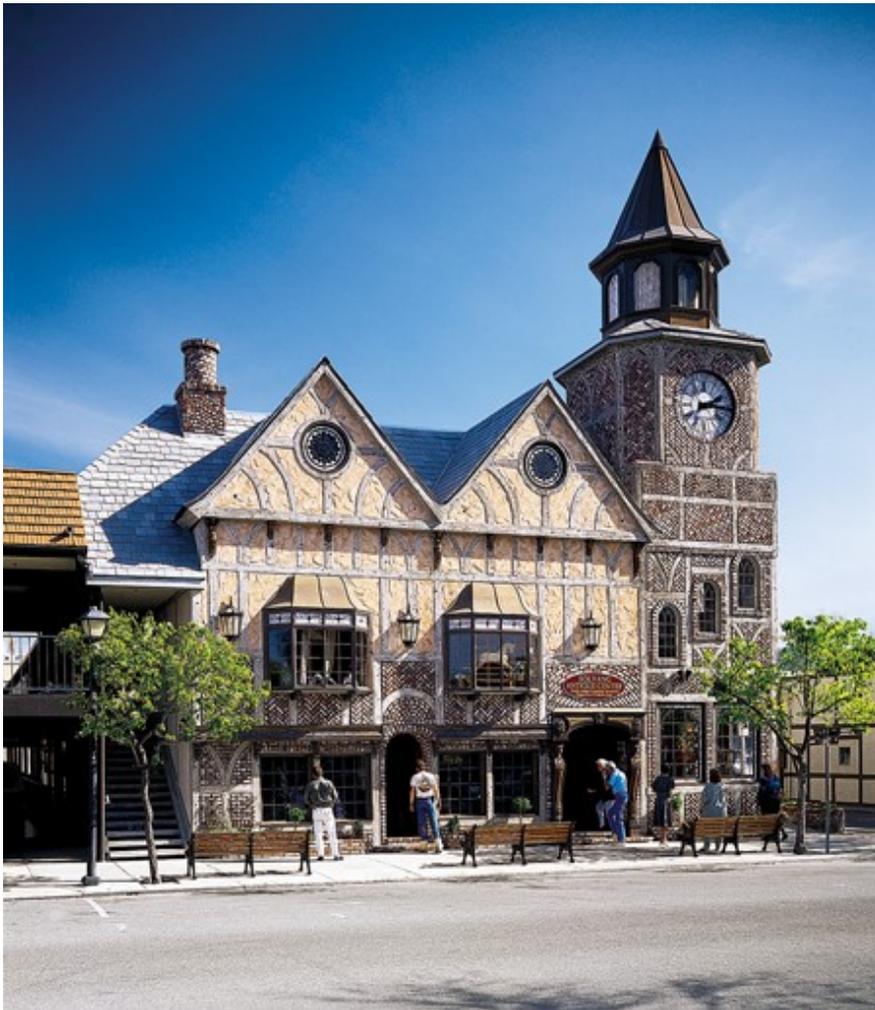
Born and raised in Cleveland, Ohio
Attended Wittenberg University in Springfield, Ohio
Sent to California by the Clorox Company as a production line manager at their Los Angeles plant

Julie Palladino

Born and raised in Los Angeles
Graduated with a BFA from UC Berkeley
Worked as a graphic artist in the publishing field, including Architectural Digest and Bon Appétit Magazines



Known for their creativity in many fields, the Palladinos design and build some of the most complex period style furniture made in the past century. Every piece is custom made with an emphasis on old world craftsmanship, exotic woods, hand carving and marquetry inlays. A single piece of furniture often includes over 100,000 individual pieces of wood inlay.



Renaissance Antiques
486 First Street
Solvang, CA 93463
805-452-5700
ron@renaissanceantiques.com or ron@rencodesign.com

In February 2010 Ron and Julie sold the Solvang Antique Center. They currently operate an independent showroom in the lower level of the Old Mill Shops building. More than 150 clocks of all types are featured, many at greatly reduced clearance prices. Antique disc and cylinder music boxes, scientific instruments, automata, antique accessories and furniture are also in abundance.

WANTED



YOSEMITE SAM
\$ 0.20 REWARD

Welcome New
Member
Greg
Anserlian
from Burbank

9

MOMENT OF INERTIA AND TORQUE

By DAVID PEREZ

In our clocks and watches we have rotating components that start and stop, some many times per second. The physics of the matter may or may not be apparent to us. In most cases we take for granted that the designers took this into consideration.

In rotational motion, torque is required to produce an angular acceleration of an object. The amount of torque required to produce an angular acceleration depends on the distribution of the mass of the object. The moment of inertia is a value that describes this distribution. It can be found by integrating over the mass of all parts of the object and their distances to the center of rotation. The torque on a given axis is the product of the moment of inertia and the angular acceleration. The units of torque are Newton-meters (N·m).

torque = (moment of inertia)*(angular acceleration)

$$\tau = I\alpha$$

τ = torque, around a defined axis (N·m)

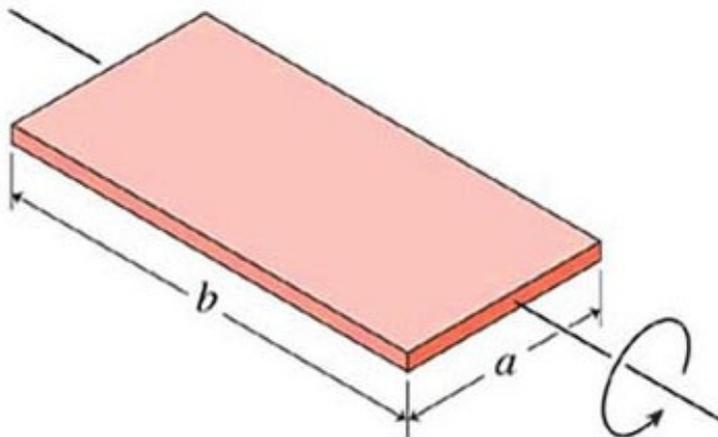
I = moment of inertia (kg·m²)

α = angular acceleration (radians/s²)

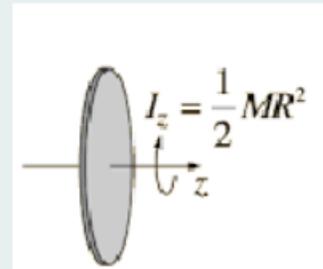
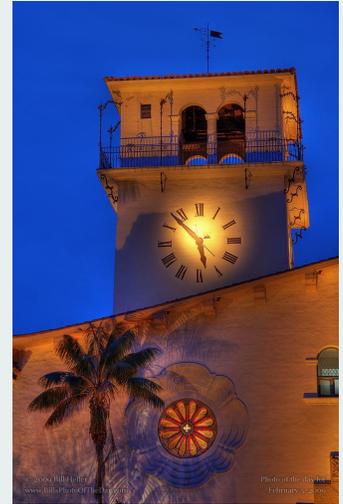
Here is an example of calculating the torque required to accelerate a rectangular plate such as a governor of a clock:

Flat plate about central axis

$$I = \frac{1}{12} Ma^2$$



In this image dimension "a" is the equivalent of dimension "r" in our equation.



Moment of Inertia of a solid disc rotating about its Z axis

MOMENT OF INERTIA AND TORQUE (CONTINUED)

The moment of inertia of a rectangular plate is $\frac{1}{12} mr^2$, where m is the mass in Kilograms, and r is the length of the side perpendicular to the axis of rotation in meters. The plate has a mass of 4.9×10^{-3} kg, and width 25 mm. If the angular acceleration of the plate is 1 radian/ s^2 , what is the torque? (Assume the plate is solid just for simplicity).

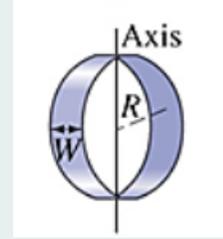
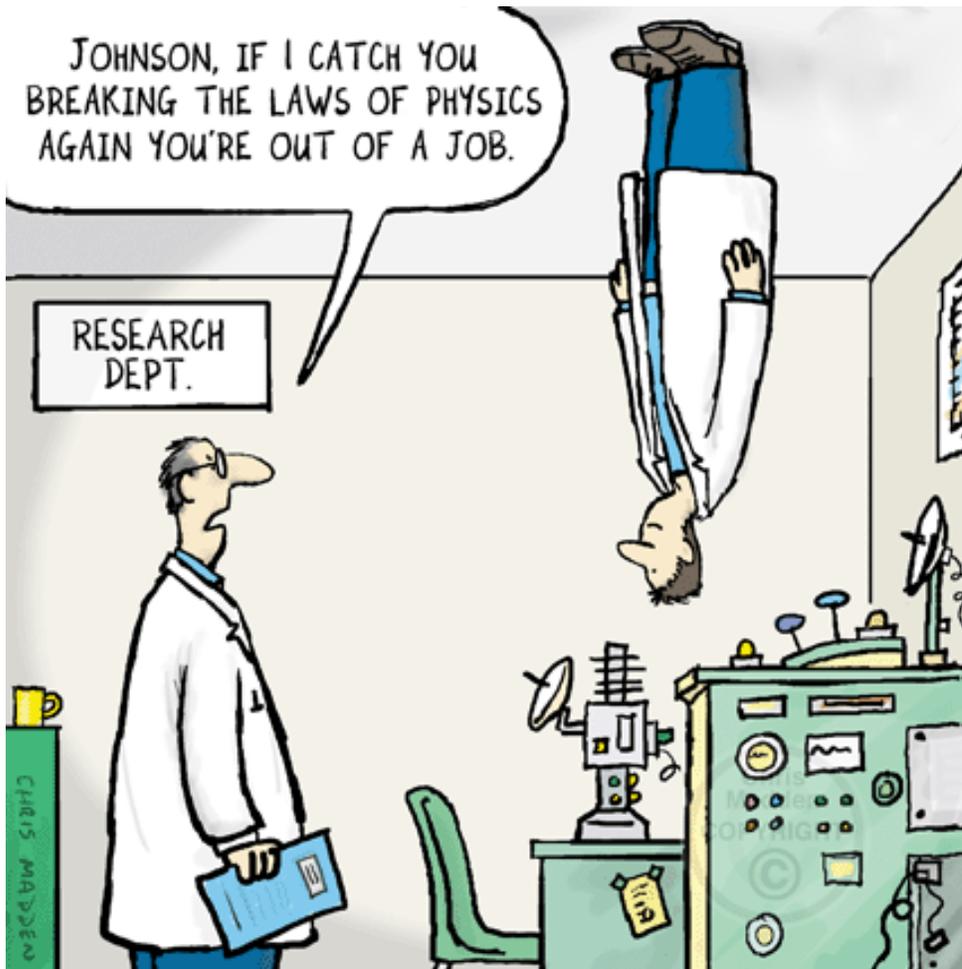
Steel has a density of 7800 Kg/ m^3 . Assume the plate has dimensions 1mm x 25mm x 25mm. So the mass of the plate is 4.9×10^{-3} Kg. The torque is:

$$\tau = \frac{1}{12} mr^2 \times 1 \text{radian/sec}^2$$

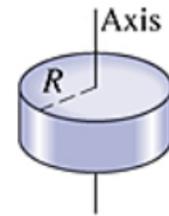
$$\tau = (\frac{1}{12})(4.9 \times 10^{-3})(.025^2)(1)$$

$$\tau = 255.2 \times 10^{-9} \text{ Newton meters or as we say here in the "States"} \\ 188.2 \times 10^{-9} \text{ foot pounds}$$

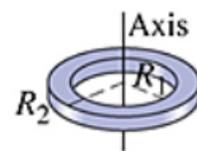
In a future issue we'll investigate what this means for the drivetrain associated with this governor.



$$\frac{1}{2}MR^2 + \frac{1}{12}MW^2$$



$$\frac{1}{2}MR^2$$



$$\frac{1}{2}M(R_1^2 + R_2^2)$$

Moments of Inertia of various shapes

WATCHMAKING

EDUCATIONAL WORKSHOPS

- **“Introduction to Antique Clock Collecting & Repair & Maintenance”** workshop. Chapter 190 continues to offer this popular 2 day workshop. It’s open to members, friends and the public. The only prerequisite is “Interest & Curiosity” in Mechanical Clocks. All tools, movements, and knowledge will be supplied. The next workshop is Sept 26 & 27 at the Historic Dudley House Museum in Ventura. **For further information contact Mike Schmidt 805 988- 1764 or email EagleCreekClocks@msn.com**
- **FSW 102 “Time & Strike Spring Barrel with Rack & Snail Strike”** is scheduled for 2 weekends, October 17-18 & 24-25. Instructor is Lex Rooker. The coordinator is Walter Pickett. **For further information contact Walter at (562) 208 8923 or email: pickettlakewood@aol.com**
- **FSW 200 “Fundamental Skills for Lathe & Clock Repair”** Part 1 is scheduled for 4 days February 26-29, 2016. **For further information contact Mike Schmidt 805 988 1764 or email eaglecreekclocks@msn.com**
- **FSW 301 “Introduction to Basic Pocket Watch Repair-American Watch”** is scheduled for January 22-25, 2016. Ferdinand Geitner - instructor. **For further information contact coordinator Chris Manzione 805 312 5402 or email manzione5@verizon.net**

Other workshops will be scheduled as interest develops: These may include: FSW 302 Wristwatch, FSW 201 and 202 Lathe Workshops, FSW104 Fusee & Vienna Regulators, FSW101 Introduction to American Clocks and others .

Complete workshop descriptions and information can be found on the NAWCC website

Please let us know what workshops or repair instructions you desire. NAWCC requires 7 students for a workshop. **For further information on any of the above workshops, contact Mike Schmidt 805 988-1764 or e-mail eaglecreekclocks@msn.com**

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