



MORBIER PIN WHEEL ESCAPMENT

by Ken McWilliams

A while ago, I repaired a French Morbier regulator. Yes, some of the Morbiers can legitimately be considered a regulator. (The term regulator originally applied to any highly accurate clock) This one is different from the average morbier and had a few unique problems, so I thought I would share it with you.

Most of the Morbiers that we are used to seeing are of the wall mounted variety with very ornate headpieces and pendulums. This one was mounted in a long case. (Actually, this is how long cases originated but that is another story)

This one was the victim of some inept movers and fell face down onto a hardwood floor. The cherry wood case suffered glass and door damage but the movement survived reasonably well as did the porcelain dial. These old movements with their massive wheels, arbors and cases were built to survive.

The movement has a pin wheel dead beat escapement. (Not to be confused with a pin pallet escapement used in cheap clocks.) Pin wheel escapements can be as accurate as the Graham escapement used in most regulators. The pins are usually round, but can also be triangular or half-round. This movement has the half-round pins as shown in the illustration at the right. These allow for a shorter drop and are therefore the more accurate.

Pin wheel escapements are often seen in skeleton clocks and custom made clocks. This is probably because they are the easiest escapement to make and adjust, plus they do not require specialized tooling.

The photo below shows the escapement in operation after cleaning and repair.

Note that the distance between the pallets can be adjusted (yellow circle) and the lock can be adjusted by a setscrew on the crutch collar that attaches it to the pallet arbor, but there is no axial adjustment.

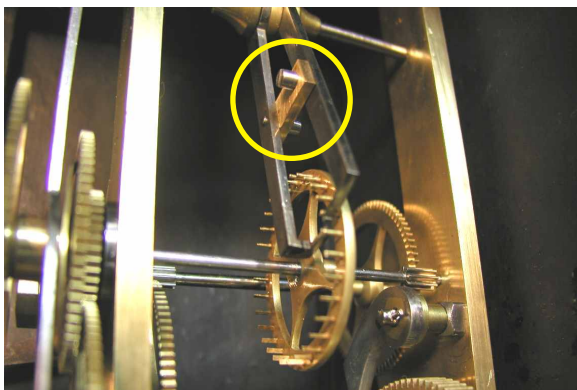
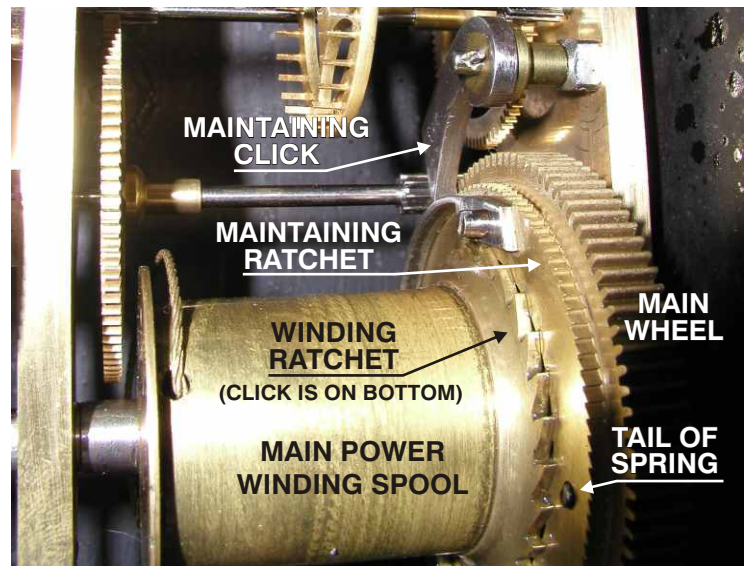
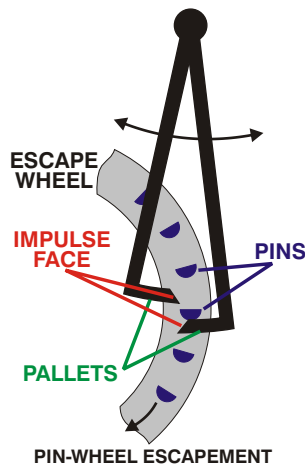
The escape wheel arbor is about 5.25 inches long and sustained some damage in the fall. (More on that later)

Another interesting item is that this clock has a maintaining power system. Never heard of it? The maintaining power system has a spring incorporated into the main wheel that provides power to the time train even when it is being wound. If this were not there the clock would be unpowered when you were winding it. On some clocks, stoppage during winding could cause it to malfunction.

To set the maintaining spring, you wind the clock backward toward the click. It will only move a very small amount to set the maintaining spring. After you do this, you can wind the weight continuously without effecting the running power.

All precision regulators since the mid 1700s have had this feature or a similar mechanism.

The following photos show how this one is made.



Officers and Board of Directors

PRESIDENT

Mike Schmidt

(805) 988-1764 • EagleCreekClocks@msn.com

VICE PRESIDENT & EDITOR

Ken McWilliams

(818) 718-8300 • internut@socal.rr.com

SECRETARY & LEGAL ADVISOR

Paul Skeels

(805) 525-7325 • plskeelsatty@verizon.net

TREASURER

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(805) 497-8381 • gfgaglini@adelphia.net

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E-Mail For Newsletter:
internut@socal.rr.com

Web Site:

www.nawcc-ch190.com

WEBMASTER

David Coatsworth

dave@biswebdesign.com

PRESIDENTS MESSAGE

By Mike Schmidt

The month of October finds Chapter 190 continuing to add new members.

Chairman George Gaglini reports that we now have 107 current members.

Treasurer Donna Gaglini reports that all the current bills are paid and we have a balance of \$3,940. A current financial statement is posted and available to all members.

Director of Education Ferd Geitner has reported that the early morning Sunday workshops have been well attended. We have 16-18 members and guests bringing items to share or a problem that needs advice. If you need help come stump the "Experts".

The August monthly meeting attendance was 50 members and guests, and 40 members and guests in September. Thank you for your participation.

The NAWCC membership website keeps improving by the day. A new single Membership Sign In has made it very easy for all members to have access to all the new wonderful features. The use of the new NAWCC Community website is growing as more members check it out. It is an online community where you can relate to the other 12,000 members who have access to online resources. An updated Horology Index is the world's most comprehensive site for horological links. There is the ability for you to add links or report bad links or make suggestions. You can access this site from nawcc.org under the Horology Central section. I am looking forward to the coming Classified Auction part of this website. Your NAWCC website is a wonderful growing and changing tool that belongs to you and is a part of the cost of your membership. All of you who make a business of horology must take advantage of all the features that will help your business prosper. Check it out.

I wish to thank the members who have helped Dottie with hospitality and lunch the last several months: June - George Antinarrelli, July - Ernie Jenson, August - Mike & Beverly Schmidt, and September - Rowena Sachs. It sure helps when each of us do a little part.

This month's program is a feast for your traveling and horological senses. Dave Weisbart from Chapter 69 will present "Dave's Horological Vacation in Vienna and Prague" (a professional program with monolog and music) Let's take a vacation with Dave and see some grand sights and great clocks.

The Show & Tell the last several months has been outstanding. Thank you all for bringing so many interesting clocks, watches, and horological items to share. How often do you get to see a European tower clock at Show & Tell? The topic for this month will be any horological item from Europe. Of course, anything you wish to share is always welcome.

See you at the Meeting

Mike



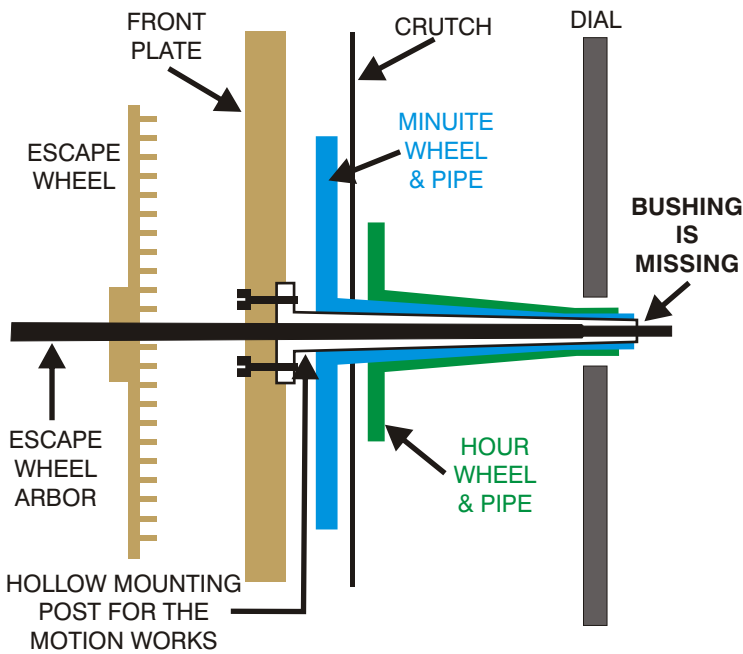
Happy Birthday

**Jim Ingersoll, Larry Lopez,
and Lynn McWilliams,**

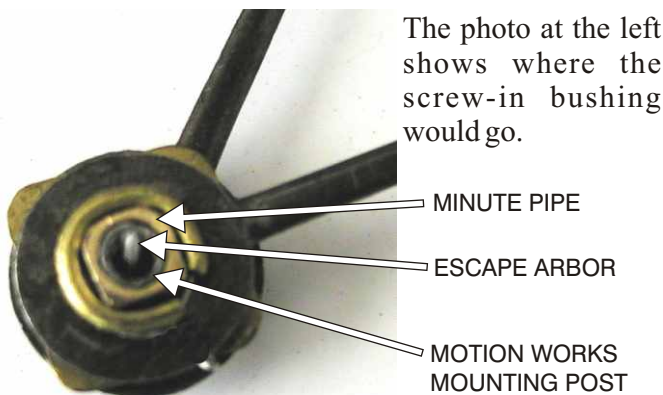
When the clock fell, the escapement was damaged. The escape wheel arbor bent and the heavy pallet arm sheared off one of the pins. The crutch slipped on the pallet arbor causing it's pivot to bend slightly. No other damage was detected. Not bad for what must have been a nasty crash.

The repairs were not difficult. A new pin was turned on the lathe, a flat was filed to match the others, polished and pressed into the wheel. The bent pivot was straightened without any problem.

All parts were carefully examined and cleaned. All the normal repair procedures were done, polish pivots, peg pivot holes, etc. I assembled the movement and was checking end shake when I noticed that the escape wheel had an excessive amount of movement, almost the entire length of the rear pivot. Further investigation revealed that there was no front bushing. How could this be? The clock ran for many years prior to the crash, according to the owner. Below is an illustration of the escape wheel and motion works.

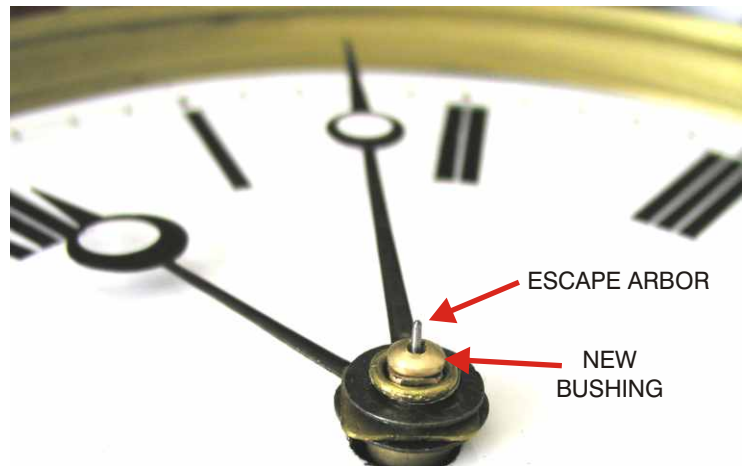


Additional examination revealed that the end of the mounting post for the motion works had an internal thread. This had to be where the missing bushing went. The bushing would serve another purpose, it would also prevent the minute pipe from moving more than a 32nd of an inch.



The threads showed wear from the escape arbor banging around the inside of the tube. The crutch and the minute wheel also showed wear marks from contacting each other. It never ceases to amaze me how hard these old clocks try to keep running, even when some of their parts are missing.

Correcting the problem was relatively easy. I used a metric screw about .250" long and drilled a 0.045" hole through the center. I then counter-bored the hole to 0.07" on both ends so that I ended up with about a 0.060" long bearing surface in the center for the escape arbor pivot. The pivot was about 0.050" in diameter so I opened the hole and made a loose fit due to the long length of the arbor. (I used cutting and smoothing broaches for this) Next, I cut the head of the screw down to where it would still contain the minute pipe, but allow removal of the hands. (Sherline lathe used for all machining) Below is a photo of the finished bushing.



The movement was assembled, lubricated, and mounted on my test fixture. The beat and rate were adjusted using a Microset timer and allowed to run for 8 days. At the end of the 8 days, it had gained 17 seconds without any rate adjustments beyond the initial setting.

One thing that I have neglected to mention is why the escape arbor was so long. Can you guess why? I'll give you two clues. One, the pendulum is about one meter long and two, the escape wheel has thirty pins.

I'm sure the old clock repairers have already figured it out but, for the benefit of our new repairers, here is the reason.

A one meter pendulum has a period of one second. In other words, it takes one second for the pendulum to travel from center to it's furthest swing and back (one beat). A full cycle, end to end, is two seconds.

The escape wheel has 30 pins and each of the two pallets will contact each pin. So, 30 pins times two pallets equals 60 beats per revolution.

We know that one beat is one second therefore, one revolution of the escape wheel takes exactly one minute.

Although it is missing, this clock originally had a sweep second hand. If it were mine, it would again. ■

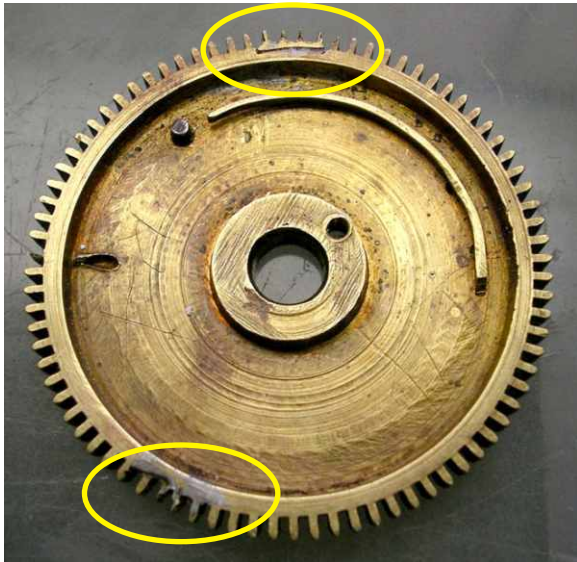
Tales From the Bench

by Ferdinand Geitner

Hidden Traps

One of the biggest problems in restoring a watch or clock to its original splendor is finding and correcting previous "Repairer's" mistakes.

Recently I received a double fusee English Bracket clock for service which according to the customer had some broken teeth. After dismantling and examining the parts it became quite obvious why the teeth broke (see photos). I was amazed that it even worked for any time at all.



After extensive repairs and replacing several sections of teeth on two wheels that matched the shape and circumference of the original teeth I assembled the movement, turned the gear train by hand to check for smooth running, added the anchor and placed it on a test stand.



It would stop at various intervals and I could not determine why. I disassembled the movement again and again, checking the components, testing the smoothness of the gears I had repaired using my depthing tool. I confirmed the correct distance of the bearings until I came to the center wheel, which I did not repair as it was the original wheel and in good condition.



However, someone had replaced the pivot, a very good looking job, perfectly finished and blending in. The only problem was, it was slightly off center and therefore changed the depthing every hour. Sometimes it would just make it and then other times it would lock up. It was so slight that it was not noticeable when turning the gears by hand, but it showed up when powered by the mainspring.

I corrected the problem and the clock runs great to this day. ■



Congratulations to all the students who have recently completed the Beginning and Advanced Sherline Workshops. The four day workshops at Ventura college were taught by Jerry Kieffer and coordinated by Ken McWilliams. Attending students: Kathi Sheffrey, George Gagalini, Laurie Conti, Kim St Dennis, Will McCown, Larry Smith, David Delfino, Erwin Cohen, Gene Goldstein, and Dale Cipra.

A Pillar & Scroll Clock

By Dan Weiss

When I joined the NAWCC, in August of 1964, I was really gung ho about clocks. I not only wanted to collect them, I also wanted to make them.

The photo is a Pillar and Scroll clock that I built and gifted it to my employer at that time of my life.

The clock was crafted about 3/4 the size of an average Pillar and Scroll clock. I made the dial and had someone else do the reverse tablet painting. I have painted tablets myself, but I am much better doing landscapes in regular oils on canvas.

The wood for all my home-made clocks is African Striped Mahogany. The wood below the finials is veneered Birds Eye Maple. I hand painted the spandrels and I honestly can't remember how I made the dial - I think through offset and camera work. The printed label pasted inside the clock, if I remember correctly, is the seal of the State of Pennsylvania.

I used a 10" table saw, jig saw, and a cheap homemade lathe, along with the normal hand tools.

The movement is a Seth Thomas, store bought, eight day, spring wound hour and half hour strike.



Ventura Chapter 190 people

By Paul Skeels



Cathy and Gilbert Gillogly

Cathy and Gilbert Gillogly dated in high school but then lost track of each other for many years. After several decades, they found each other again and then, about 11 years ago Cathy and Gilbert were married. I had the pleasure of interviewing them at the September 20, 2009 meeting of Chapter 190 at Ventura College.

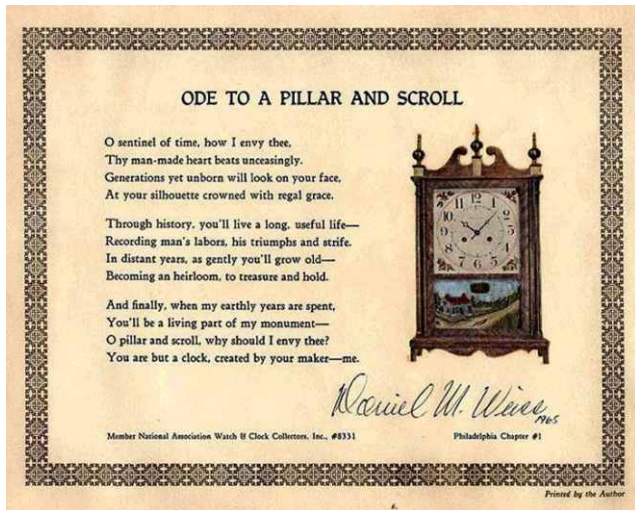
When Cathy and Gilbert reunited they found, much to their mutual astonishment, that they both collected clocks. Cathy admitted she had about 12 and Gilbert admitted he had about 25 timepieces. They decided they'd like to learn how to make the clocks run, so they enrolled in an adult education class in West Covina taught by Al Umbrello. Larry Smith told them about Chapter 190, which they soon joined. Their mutual hobby is now repairing the clocks in their extensive collection. The Gilloglys receive assistance in certain specialized aspects of clock repair from their many friends in the hobby.

Cathy's main interest is 400 day clocks. She confides that a plastic fishing bobber, suitably painted, makes a terrific moon phase indicator on a rare model of 400 day clock with that feature. Gilbert's main interest is kitchen clocks. His oldest is his grandmother's Vienna Gran Sonnerie.

I asked Cathy and Gilbert what they do in "real life." It turns out they are both retired educators. Cathy taught English in Yorba Linda Middle School to 7th and 8th grade students. Gilbert served as an elementary and adult teacher and administrator in the Los Angeles Unified School District.

The Gilloglys live primarily in Idyllwild but are in the process of a long-term move to Port Hueneme.

Chapter 190 is fortunate to have Cathy and Gilbert Gillogly as members and I, for one, am looking forward to seeing some of their clock treasures at an upcoming Show and Tell. ■



After I finished making the clock, I felt compelled to write a poem about it, "Ode to a Pillar and Scroll". The poem label has the actual clock in color. ■

Editors note:

Last month I mentioned that Dan Weiss, our only Pennsylvania member, was ninety three. He is actually ninety four.

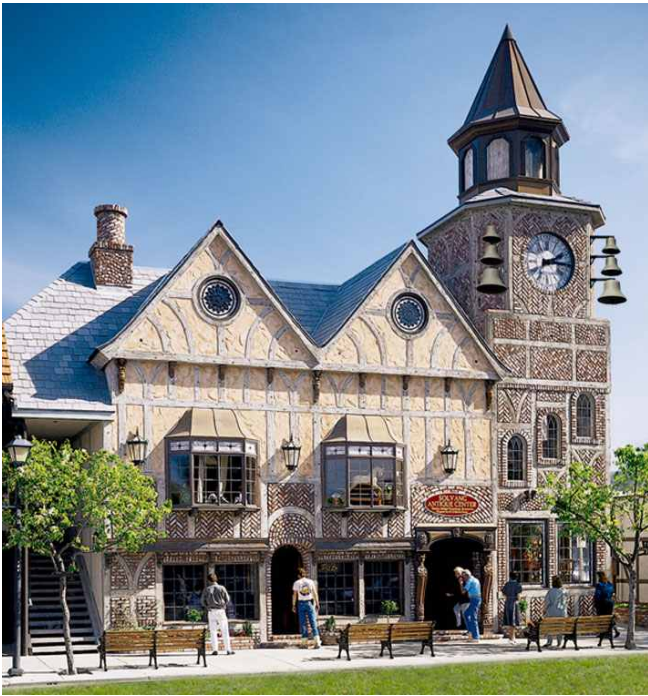
Welcome New Members

Gloria Perissinotto,
Ron & Julie Palladino



Landmark Solvang Antique Center For Sale

By Ken McWilliams



I am sure that most of you are familiar with the Solvang Antique Center. You may also have heard that Ron and Julie Palladeno (owners of the center) have announced plans to retire. While some people have assumed that the business will be closing, it is their intention to sell the business and continue to work with the new owners for a period of time to ensure that their standards and relationships are maintained. They will continue to assist, on an ongoing basis, behind the scenes.

While the sale of the business is not yet definite, they are hopeful that it will be finalized in the next few weeks.

Because none of the prospective buyers have experience in clock restoration, they have decided to offer the "HRS" (Horological Restoration Services) as a separate business entity, for sale to a qualified individual.

This could be a very nice opportunity for someone that is serious about clock restoration and would like to consider a lifestyle change. The new owner would take immediate advantage of a loyal and well established client base.



Restoration workshop

The second story location of the restoration shop allows for quiet and privacy, (no tourists walking through) but still provides excellent exposure and accessibility. It has a private parking lot on the premises and elevator access. The workshop enjoys a beautiful view, through trees, of the park across the street and its many events.

If you have any questions about the listing, contact Ron or Julie Palladeno. **Phone:** 805-688-6222

Website: www.solvangantiques.com

**The next Meeting & Mart for Chapter 190
is October 18, 2009**

Sellers may start setting up at 11:30

The Mart is open from 12:00 til 1:15

The Meeting starts at 1:15

PROGRAM

"Dave's Horological Vacation to Vienna & Prague"

Presented by Dave Weisbart (From Chapter 69)

This is very well made and narrated documentary of Dave's trip.

SHOW & TELL

"Bring a European watch or clock"

CHAPTER EDUCATIONAL OPPORTUNITIES

Wristwatch Collectors- Many NAWCC members keep asking me for a series of workshops on wristwatch repair. A dialog has begun with 7 interested members and the NAWCC education committee. If you are interested in repair classes or a dialog, send me an email. EagleCreekClocks@msn.com

FSW 101- (Beginning Clock Repair) Introduction to Basic Time and Strike March 12-15

Coordinator -Ken Young 818 353-0918 email krybob@hotmail.com



This month's Mini-Workshop will be

**An open workshop that will begin
with George Antinarelli giving**

a demonstration using the Bergeon bushing tool.

***This is an open forum workshop and will be an
excellent opportunity to learn and share knowledge.***

Ferdinand Geitner will be the moderator

The workshop begins at 10:30 am. Free to members

CLASSIFIED PAGE

This page is dedicated to advertising for Chapter 190 members. It is, of course, free to members.

SERVICES OFFERED

The Montecito Clock Gallery

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FOR SALE

WATCH REPAIR TOOLS & MORE!

I will have a huge selection of watch repair
tools and other items from my latest estate
buy at the Chapter 190 meeting.

Dave Coatsworth

dave@daveswatchparts.com

WANTED

URGENTLY NEEDED, VISIBLE ESCAPEMENT MOVEMENT

French type-platform escapement (no pendulum)
Winding hole spacing of 38.9 mm, (1.53")
Repairable, other details available on request.
Bob Reichel, welchdoc@yahoo.com **Ph: 1-206-364-7374**

I'm looking for a five inch piecrust bezel for an Ansonia clock.

**Contact:
Tom McKnett
805-444-6383**

Antique French 2 or 3 dial calendar clocks.
Antique English 2 or 3 gear-train skeleton clock.

Loren Miller, **Pacific Coast Clocks**
4255 E. Main St., No. 15, Ventura, Ca.
Located in Firehouse Plaza (Main St. & Telephone Rd.)
Tel. 805-650-8800

We are in the Market for an Ansonia
"Admiral" crystal regulator.
Chapter 190 members Gary & Joan Benoit
clockworksunltd@sbcglobal.net

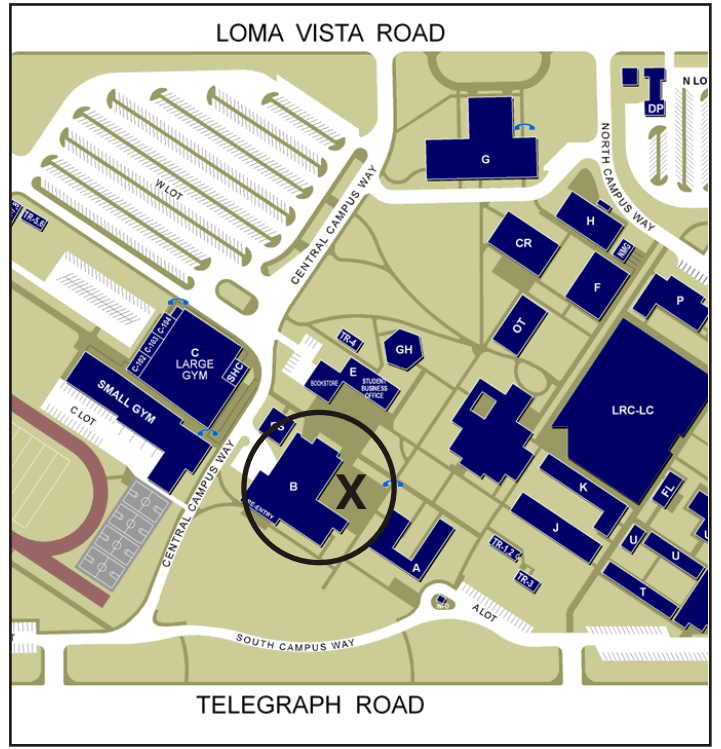
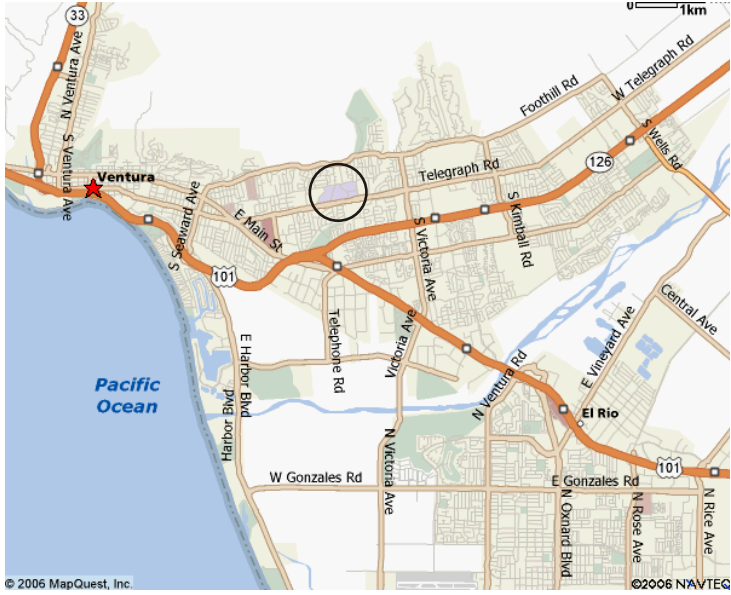
- Chronometer -

Hamilton 21 Marine Chronometer in running condition, with
inner box and gimbals; outer box not essential.
Please contact: Giorgio Perissinotto
E-mail: giorgio@spanport.ucsb.edu
(I'm teaching in Spain so there is no local California phone)

- Watch Repair Tools -

I'm just starting out and need just about everything.
I would prefer to purchase an entire collection of old
watchmaker's tools.
Please contact:
David Clarkin Tel: 805-988-4384

The Chapter 190 meetings are held the third Sunday of each month. (No meeting in December)
We will meet in the cafeteria on the Ventura College campus. The cafeteria is located in building "B", east of the gym and athletic field.



Hope to see you there!

October 2009 Issue

OCT 18
NEXT MEETING

Chrono Times
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 17738 Superior St. Unit 21
 Northridge, CA 91325