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VOLUME 7, NUMBER 4 APRIL 1983

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Official Publication of the American Watchmakers Institute

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Executive and Editorial Offices

AWI Central
P.O. Box 11011
3700 Harrison Avenue
Cincinnati, Ohio 45211
Telephone: (513) 661-3838

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Maury Norrell: *Managing Editor/Advertising*

Donna Baas: *Production Director*
Regina Stenger: *Art Director*
Sue Scott: *Business Manager*

Mildred Howard: *Circulation Manager*
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FELLOWS OF THE AMERICAN WATCHMAKERS INSTITUTE



Editorial

Material suppliers report that more and more watchmakers are ordering parts by the piece rather than by quarter dozen or dozen pieces. Even though almost all companies give an incentive discount price for purchasing more than one piece, watchmakers are not taking advantage of the savings. There may be four reasons that enter into their actions. First, they may figure that they simply do not want to be bothered. Second, with so many new movements on the market, a history of a particular part with a particular calibre has not yet been ascertained and they do not want to have parts on hand that may never again be used. Third, more recent watchmakers have never been taught or do not want to spend the labor time to set up material systems. And fourth, it has been estimated that only 12% of the watchmakers own a complete microfiche system. Beyond that, it has also been estimated that only three out of ten owning the system actually use it in ordering materials. Consequently, interchangeability is being used by a mere 4% of the watchmakers today.

All of this indicates that the dust has not yet settled with the quartz explosion and it may be difficult to predict when it will. It also shows that the traditional method of on hand material stocking by watchmakers is not nearly as popular as it once had been.

On the Front

In Latin they're called narcissus. In English we call them daffodils. In any language, the lovely yellow flowers on our cover are a beautiful sign that winter is over and spring is here!

Quality Clock Movements



450 Quartz

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Extreme accuracy is now available at very moderate cost for customers that demand precise time keeping. Quality features such as high quartz oscillation of 4.194304 MHz. Assures reliable time keeping as well as accuracy. The small dimensions are ideal for all jobs. Fully warranted for one year.

475 Tiny Quartz

ALMOST AS SMALL AS A WATCH!

Weighing only 1.25 ounces, this Versatile Movement will carry a sweep second hand and run for over one year on a single "AA" cell – only 9/16" thick this compact unit can be fit into any type case or panel. A single center nut enables the movement to be easily fixed to a dial. The hand setting knob, seconds setter, and battery compartment are conveniently located on the back. Accurate to (±) 10 seconds per month.

2¼" Square-2¼" Diagonal



$4.25 In Quantity

1 or 2 @ $7.00 – 3 to 9 @ $6.50 – 10 to 24 @ $5.25 – 25 to 49 @ $4.75 50 to 99 @ $4.50 100 @ $4.25

580 Electronic Chime



$18.95

In Quantity

1 or 2 @ $24.95
3 to 9 @ $21.95
10 to 24 @ $18.95

2 3/8" w x 4" hi x 1 3/16" deep.

This exciting new addition represents the lowest priced electronic chime movement on the market today. It will permit you to offer wall and mantle clocks at prices substantially lower than similar models containing mechanical chime units. Full tone appreciation is achieved when fully mounted.

Plays either Westminster or Whittington on the hour. Volume sound is adjustable or can be shut off completely. Control switch on back for melody selection. Runs one year on "C" battery.

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210 Roman

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COMPLETE MOVEMENT, DIAL, HANDS W/PLEXI-GLASS CRYSTAL. READY TO INSTALL IN CERAMICS, WOOD, HOME, CAR OR BOAT.

* Runs for over a year on a single AA cell.
* Alarm & Time Set located on back of Movement.
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* Dial diameter 3½" with back to fit 3" opening.

MODEL	DESCRIPTION	PRICES 1 or 2	3 to 9	10 to 24	25 to 49
200-1	Arabic-Gold Bezel & Dial	$11.95	$10.95	$8.95	$7.95
200-2	Arabic-White Bezel & Dial	11.95	10.95	8.95	7.95
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210-2	Roman-White Bezel & Dial	11.95	10.95	8.95	7.95

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575

Quartz Striking Pendulum

8¼" x 5⅝"



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- Chimes on half hour – Counts on hour
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- Runs for 2 years on 'D' alkaline cell
- Chimes can be silenced by pushing lever
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President's Message/Marshall Richmond



Workers for AWI and Affiliate Chapters

I have heard that in most any organization there are *50* eligible workers to every *one* that actually works, I don't know if this figure is correct. After having worked in many organizations in which many of the members were good workers, I noticed those who did were seemingly addicted to what they were doing.

This especially holds true in the American Watchmakers Institute and its affiliate chapters. The officers, directors and members of committees do a fine job of making it function as well as those officers, directors and committee members of the various chapters. These people have had the greatest challenge offered them in the past 10 or 20 years that has ever been offered in the history of watch and clockmaking. In this time the whole technology has changed from the manual wind "tick-tock" watches and clocks to automatic winds, electric winds, daters in watches, and on to the electric balance wheel movements through the tuning fork to the digitals, and now the quartz analogs! As servicing time-keeping devices is our profession much must be learned in order to keep up with all the new innovations. To do so, proper training, information and knowledge must be available. The American Watchmakers Institute and its affiliate chapters have so far done exactly that. Individual workers for these fine organizations have made available to members various seminars and workshops, furnished programs, and made all the arrangements and communications necessary to get this information to watch and clockmakers. I would especially like to commend the AWI instructors for giving up their weekends and traveling all over the United States to teach watchmakers how to service new innovations; they are doing an excellent job with their presentations.

This kind of addiction is good for everyone. It is good for the worker as it gives him satisfaction and it is good for the

(Continued on Page 9)

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SEMINAR No. 1

An excellent thirty-five hour course in jewelry making, devoted to teaching the basic techniques that are required in the day-to-day operation of the average jewelry store. Invaluable both for the jewelry store technician who wishes to sharpen his skills and brush up on the latest methods, and for less-trained employees who wish to acquire the ability to do in-store jewelry work.

These skills have become more important in the operation of the above store, both because of the delays and expense involved in sending out work to job shops and to assure the customer of immediate delivery, are almost a mandatory requirement in today's service oriented market.

Techniques taught in these seminars include sawing, filing, ring sizing and welding, stone setting, rhodium plating, prong replacement and repair, polishing and finishing, jewelry repair and related jewelry work. These operations will cover approximately 90% of the work currently sent to job shops by the average jeweler. A substantial portion of the cost is related to the use of 14K struck heads and shanks in the course of instruction. It is, of course, possible to use brass or silver findings instead of gold. However, in a jewelry store, you will be working with gold almost exclusively and we felt it is essential to use 14K gold findings in the course of instruction. Their use is included in the cost of $365.00 and they remain the property of Queen City Seminars.

Limited to a maximum of ten, the seminars are held in air-conditioned quarters supplied with the latest and most sophisticated equipment currently available. The seminar starts at 8 a.m. on Monday and will end early Friday noon with approximately 35 hours of intensive instruction. Torches, benches and shop equipment and supplies are furnished free of charge. The applicant will be required to bring with him, or purchase on arrival, hand tools used by him at the seminars. A list of tools will be provided upon request.

Over 1200 individuals have attended these seminars since the first group in June of 1973, and we currently invite you to contact one of those who have attended for an evaluation of their effectiveness.

SEMINAR No. 2

A thirty-five hour seminar in casting by the lost wax process, emphasizing making your own design in wax then setting up in investment, burning out and casting in metal, woodcarving, cutting rubber molds, making and cutting see-thru molds, building up models with silver to compensate for shrinkage in casting, methods of finishing, such as tumbling, stripping and use of latest polishing and cutting compounds. Enables the jeweler to tap specialized markets such as fraternal orders, fraternities, societies, school classes and organizations who wish rings or other pieces uniquely designed for their members, or individual customers who wish to duplicate an existing design or have an item made to their order. This is a growing and relatively untouched field in the jewelry industry and can be very profitable.

These seminars are limited to a maximum of five and are held in a seminar room fully equipped with the latest casting equipment available. Imitation gold or silver will be used to cast these items unless you want to purchase gold or silver. You may bring scrap for your use for making saleable jewelry. A short list of tools and supplies that the applicant will be required to bring or purchase on arrival will be sent upon request. All other shop supplies, benches, torches and equipment are furnished.

The cost of the 35-hour seminar is $350.00 and a check should be included with your application to assure you of a place in a seminar at the approximate time of your choice. Starting and running time of the seminar will be the same as Seminar No. 1.

SEMINAR No. 3

A thirty-five hour seminar in a specialized jewelry work, primarily designed for those who have attended Seminar No. 1. This program covers advanced techniques, including the finishing and assembling of castings, designing and setting dinner rings and other complicated mountings such as designer series rings, clusters, marquise, pearshaped, and oval stone rings, bright cutting and melee setting, making pendants and pierced earrings and bezel setting and repair. Gold and silver findings used may be brought by those attending. Finished pieces of jewelry will be the property of the seminar when we supply the gold and silver findings. Special instruction on any problems the individual may be experiencing will also be given.

Classes will be limited to a maximum of ten with arrival and duration the same as Seminar No. 1 and 2. Cost will be $365.00. Please bring all tools from Seminar No. 1.

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☐ **I will make reservations** ☐ **Please reserve hotel**



YOUR Vote Counts!

CAST YOUR BALLOT FOR THE FIVE NEW MEMBERS OF THE AWI BOARD OF DIRECTORS

It's election time again! The members of the American Watchmakers Institute are invited to select five new individuals to serve a three-year term on the association's Board of Directors. These new members will join the board during the annual meeting (June 25-26) of this year. A sixteenth director will be selected to serve a one-year term at the regular meeting of the Affiliate Chapters which is held just prior to the June meeting.

As a member, your participation is a very simple procedure; during the month of April, voting instructions will be mailed, first class, to each active AWI member who is eligible to vote. The instructions will include a picture of the candidates and a short resume of their backgrounds. Members should return their marked ballots as soon as possible. All ballots must be postmarked on, or before, the deadline stated in the voting instructions.

Ballots must be returned in the official return envelope which is addressed to a Certified Public Accountant. The CPA is charged with the responsibility of counting the ballots. Each ballot return envelope is numbered to insure that no bogus votes are counted in the final total. The certified public accountant will separate each ballot from the return envelope to ensure that the voter remains anonymous.

Members are cautioned that ONLY THE BALLOTS should be sent to the CPA. Do not include any notes or special requests for information since these items would not be received by AWI personnel until the final tabulation is completed after July 1. All materials are held in the custody of the accountant until that time.

Members should study the qualifications of each candidate carefully, when the material is received. Indirectly, you are also selecting future AWI officers as well as new members of the Board of Directors. The sixteen members of the Board of Directors will meet during the annual June meeting to choose the Executive Board for the fiscal year 1983-1984. Only members of the board are eligible. The new officers to be selected will include: the President; First Vice-president, Secretary and Treasurer.

The candidates for the new positions on the AWI Board of Directors are pictured below. They are in alphabetical order for your convenience. We hope that each and every member of AWI will make his or her voice heard in this important election!

CANDIDATES FOR AWI BOARD OF DIRECTORS

(Listed Alphabetically)

David Arnold
Elgin, IL



Otto Benesh
Cape Coral, FL



M. Buddy Carpenter
Tarboro, NC



Wes Door
Kennewick, WA



Paul C. Finne
Lake Worth, FL



Orville R. Hagans
Denver, CO



Robert M. Leach
Urbana, IL



Larry Rasmussen
Waverly, IA



Louis Stephens
Grandview, MO



Jerry A. Vilicich
San Pedro, CA



Robert C. Walker
Charleston, MO



Thomas H. White
Phoenix, AZ



...So Don't Forget to Vote!

THE PRESIDENT'S MESSAGE
(Continued from Page 4)

recipients because they reap the knowledge they need to make a better living for themselves and their families. Watchmaking being the kind of work that it is requires about 110% concentration while working, so really no time is available during work time to put much thought into a commitment to the watchmaking organization. This must be done during work breaks or after working hours and I know of many fine people who burn a lot of midnight oil in order to fulfill their commitments.

If you are one of the watchmakers not yet repairing the quartz watches, think positive and tell yourself that you can do it. You will find that the necessary training will be available through all these fine workers you know, the ones who will work while the 50 let them.

Technically
WATCHES ©1983

By Archie B. Perkins, CMW, FNAWCC
(All rights reserved by the author)



HOW TO USE
The Modern Watchmaker's Lathe ©1983
Part VIII

To accurately measure any item made or altered by the use of the watchmaker's lathe, the micrometer is a necessity. Although the Vernier caliper is a very important tool to use for making measurements where close tolerances are not needed, it will not take the place of a micrometer when measuring items such as balance staffs, stems, jewels and other delicate watch parts which require close tolerances.

The principle of the present day micrometer was patented in France in 1848 by Jean Palmer. Palmer's micrometer prototype was called "SYSTÈME PALMER." This system of measurement was seen by J. R. Brown and Lucian Sharpe when they visited the Paris Exposition in 1867. They brought back one of the Palmer micrometers. Shortly thereafter they made and introduced, in America, a pocket sheet metal gauge based on the Palmer micrometer. The micrometer was improved by Brown and Sharpe in 1877 and was improved still further in 1885.

Figure 1 shows a metric micrometer. The following is a description of this precision measuring instrument. View A shows the frame. View B shows the anvil. The spindle is shown at C. The lock nut which locks the spindle in any position is shown at D. View E shows the sleeve, View F the thimble and View G the ratchet stop. The ratchet stop is used when a measurement is taken, this allows for a delicate pressure against the article being measured. The spindle C and the inside of sleeve E are threaded with 20 threads per centimeter which gives a pitch of 0.5 mm. The outside of the sleeve E has a longitudinal line which is graduated in millimeters from 0 to 13 millimeters for a half inch size micrometer and from 0 to 25millimeters for an inch size micrometer. Each five millimeter mark is numbered, for example: 5, 10, 15, 20, 25. A short mark between the millimeter marks indicates one-half millimeter. The spindle C is attached to the thimble F. The beveled edge of the thimble has 50 graduations around its circumference which represent 0.50 mm or one-half millimeter. Each graduation represents 0.01 mm. Each 5th line is numbered, for example: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45. Two revolutions of the thimble equals one millimeter. In other words, one revolution of the thimble advances the spindle 0.50 mm and two revolutions advance the spindle 1.00 mm. If the micrometer is closed and on zero, when it is opened one complete revolution to zero, the edge of the thimble will be in line

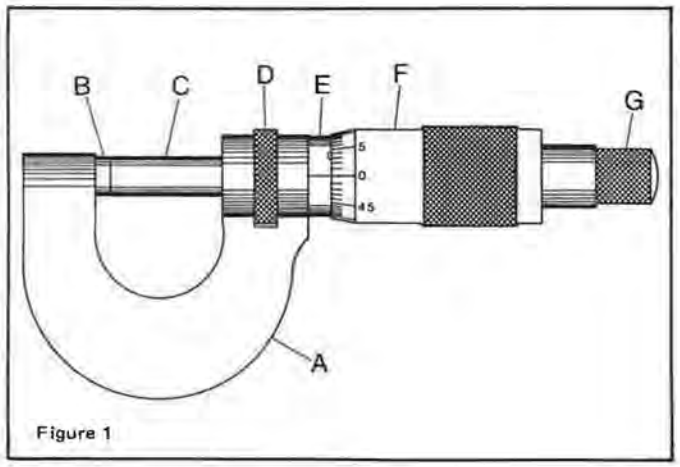


Figure 1

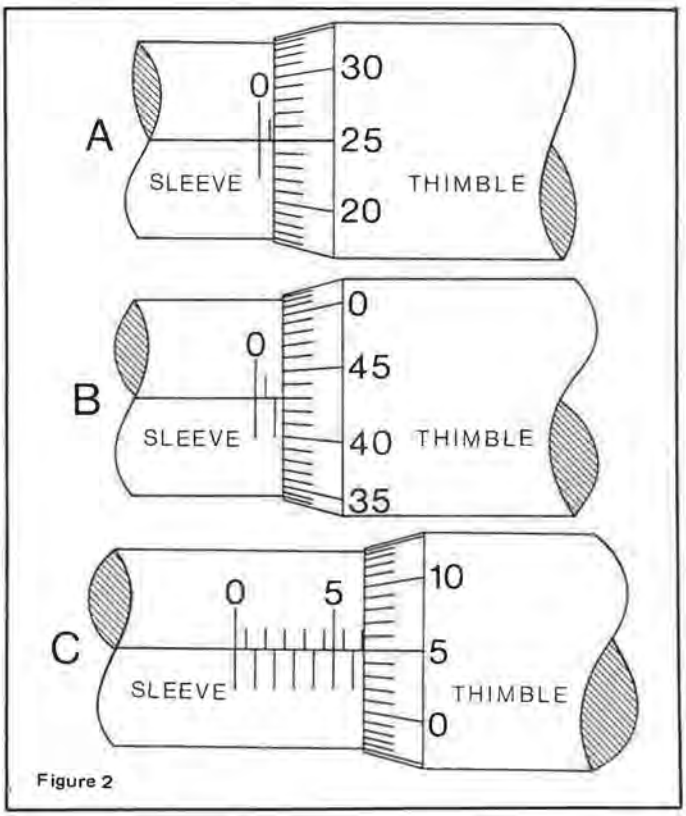


Figure 2

with a short mark on the sleeve. This will indicate a reading of 0.50 mm. When the micrometer is opened another complete revolution, the edge of the thimble will be lined up with a long mark on the sleeve which gives a measurement of 1.00 mm.

To read a metric micrometer, add the total reading in millimeters visible on the sleeve to the number of hundredths of a millimeter indicated by the graduation on the thimble which lines up with the longitudinal line on the sleeve.

Figure 2 shows three examples of reading the metric micrometer. View A shows a reading of 0.75 mm. To interpret the reading, it is found that the thimble has been backed up more than one complete turn because the edge of the thimble is past the first short mark on the sleeve which indicates 0.50 mm. The mark on the thimble which lines up with the longitudinal line on the sleeve is the 25th mark or 0.25 mm. By adding the 0.50 mm on the sleeve to the 0.25 mm on the thimble, the total measurement would be 0.75 mm.

View B, Figure 2 shows a reading of 1.43 mm. When viewing the scale on the sleeve, it will be found that the edge of the thimble is past the first long line on the scale, but not far enough to reach the second short mark. This indicates that the micrometer is opened more than one millimeter but less than one and one-half millimeters. By viewing the mark on the thimble which lines up with the longitudinal line on the sleeve, it will be found that the 43rd mark lines up. By adding the 1.00 reading on the sleeve to the 0.43 mm on the thimble, a total measurement of 1.43 mm is indicated.

A micrometer reading of 6.55 mm is shown in View C, Figure 2. When viewing the scale on the sleeve, it will be found that the edge of the thimble is past the 5.00 mm mark and is past the 6.00 mm mark. By viewing the scale more closely, it is found that the edge of the thimble is just past the half millimeter mark which gives 6.50 mm. When the scale on the thimble is viewed, it is found that the 5th mark lines up with the longitudinal line on the sleeve. By adding the 6.50 mm reading on the sleeve to the 0.05 mm mark on the thimble, a total measurement of 6.55 is obtained.

Some metric micrometers have a spindle screw which has a pitch of 1.00 mm or 10 threads per centimeter. The scale on the sleeve is graduated in millimeters, and the thimble has one hundred marks around its beveled edge. One complete turn of the thimble equals 1.00 mm. When one hundred marks are placed on the thimble, it is best to make the thimble at least twice as large as a thimble which has 50 marks.

Figure 3, View A shows a drawing of the scales of a metric micrometer. The thimble has 100 marks around its edge. The diameter of the thimble is so small in diameter that when 100 marks are placed on it they are so close together that it makes the micrometer very difficult to read. In fact, it makes it impossible to read one-half or one-quarter of a hundredth of a millimeter which can be done on most standard micrometers which have only 50 marks around the thimble. The reading shown in View A, Figure 3 indicates that the measurement is 4.98 mm. It is found that the edge of the thimble is past the 4th mark on the sleeve but not far enough to be to the 5th mark. This indicates that there are 4.00 mm plus the amount on the thimble. When the scale on the thimble is viewed it is found that the 98th mark lines up with the longitudinal line on the sleeve. By adding the 4.00 mm indicated on the sleeve to the 0.98 mm indicated on the thimble, a total measurement of 4.98 mm is determined.

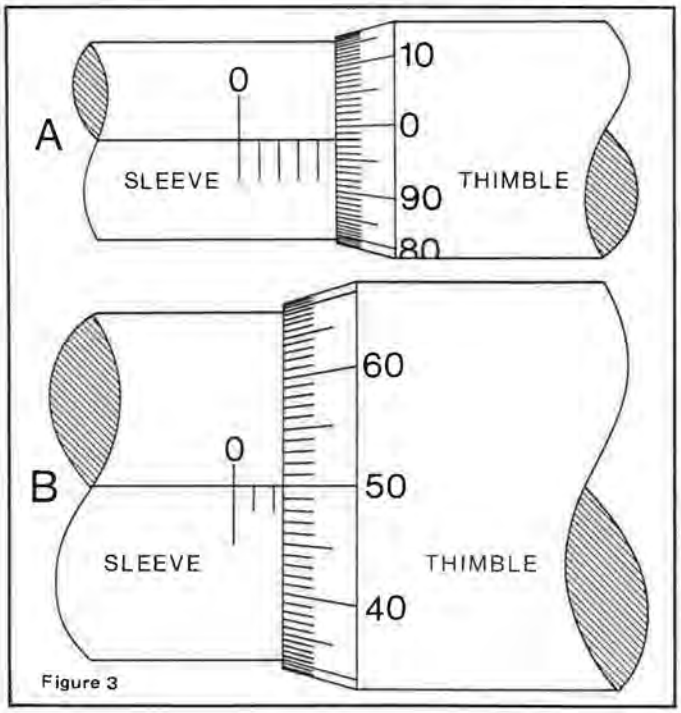


Figure 3

Figure 3, View B shows a drawing of the scale of another micrometer which has a screw with a pitch of 1.00 mm or 10 threads per centimeter. This micrometer also has 100 marks around the thimble, the same as the one shown in View A. It will be noted that the thimble is much larger in this view, which gives much more space between each mark. This makes it easier to read the micrometer; in fact, the lines are far enough apart to allow a reading of one-half or one-quarter of a hundredth millimeter to be read. View B, Figure 3 shows a reading of 2.50 mm. The edge of the thimble is past the 2.00 mm mark on the sleeve and the mark on the thimble that lines up with the longitudinal line on the sleeve is 50; adding 2.00 mm to 0.50 mm makes a total measurement of 2.50 mm.

Figure 4 is a photograph of an inch micrometer. In fact, this micrometer has a Vernier scale which makes it capable of measuring to one ten-thousandth of an inch.

Figure 5 shows two examples of reading the inch micrometer. View A shows the scale of an inch micrometer which measures in thousandths of an inch. This micrometer has a spindle screw which has a pitch of 1/40 inch or 40 threads per inch. One complete revolution of the thimble moves the spindle 0.025 inch. The longitudinal line on the sleeve is divided into 40 equal parts. Each 4th line is numbered to indicate the number of hundred thousandths. For example: 1 = 0.100 inch, 2 = 0.200 inch, 3 = 0.300 inch and so on. Each line between the numbered lines indicates 0.025 inch or one revolution of the thimble. The beveled edge of the thimble has 25 marks. Each mark indicates 0.001 inch.

The micrometer reading in View A, Figure 5 is 0.272 inch. To interpret the reading, it is found that the thimble has been backed up until it is past the 2 on the sleeve and is two marks past the 2 mark. Each mark on the sleeve represents 0.025 inch; therefore, 0.250 of an inch is visible on the sleeve scale. When the thimble scale is viewed, we find that the 22nd mark is lined up with the longitudinal line on the sleeve. To obtain the total reading, the 0.250 of an inch on the sleeve is added to the 0.022 of an inch on the spindle which gives 0.272 inch.

(Continued Next Page)

Figure 4



View B, Figure 5 shows a drawing of the scale of an inch micrometer which has a Vernier scale that makes it capable of measuring to one ten-thousandth of an inch. The Vernier scale is shown at "a." This Vernier scale is the same as any other Vernier scale. That is, there are ten numbered lines which are numbered from 0 to 10. These 10 lines on the sleeve take up a space of 9 marks on the thimble scale, which makes it possible to divide one of the marks on the thimble into 10 parts.

The following is an explanation of how the Vernier scale works. When the zero line on the thimble lines up exactly with the longitudinal line on the sleeve, the zero line on the Vernier scale will line up exactly with a line on the thimble. As the micrometer is opened very slightly, the "1" mark on the Vernier scale will become lined up with a mark on the thimble. As the micrometer is opened up still further, the second line on the Vernier scale will become lined up and so on. When the micrometer is opened far enough that the 10th line on the Vernier scale lines up, then the first line on the thimble will be lined up with the longitudinal line on the sleeve. This gives a measurement of 0.001 inch. Each line on the Vernier scale equals 0.0001 inch. To read the ten-thousandths micrometer, first obtain the thousandths reading, then see which line on the Vernier scale lines up with a line on the thimble. If it is the line marked "1," add one ten-thousandth to the thousandths reading. If the "2" line lines up, then add two ten-thousandths to the reading, and so on.

In analyzing the micrometer reading in View B, Figure 5, note that the edge of the thimble is past the 1 on the sleeve; in fact, the edge of the thimble is lined up with the second mark past the 1 on the sleeve. When viewing the thimble scale, it is found that the zero line is lined up exactly with the longitudinal line on the sleeve. This gives a reading of 0.100 inch plus 0.025 inch each for the two marks on the sleeve which equals 0.050. By adding the 0.050 inch to the 0.100 inch, a total measurement of 0.150 inch is obtained. Note that the zero line on the Vernier scale lines up exactly with a line on the thimble which means that there are no ten-thousandths to add to the measurement.

Another very important measuring instrument is the depth micrometer. Figure 6 shows a Levin depth micrometer. This is an excellent gauge to use when making balance staffs, stems and jewel settings. This micrometer was made in both inch and metric. The one shown is metric. Although these are not made any more, one may show up in used tools sometime. The one shown was purchased about 1950, and they were available until shortly after that. It is very unfortunate that this fine gauge is not made anymore.

For a description of the Levin depth micrometer, refer to Figure 6. View A shows the end of the delicate spindle and View B shows the base which the spindle goes through. The sleeve is shown in View C, the linear scale in View D, the thimble scale in View E and the internal thimble in View F. Measurements are made between the end of the base and the end of the spindle.

Figure 7, View A shows a drawing of the scales of this depth micrometer. Point "a" shows the linear scale on the sleeve, and Point "b" shows the scale around the internal thim-

(Continued on page 38)

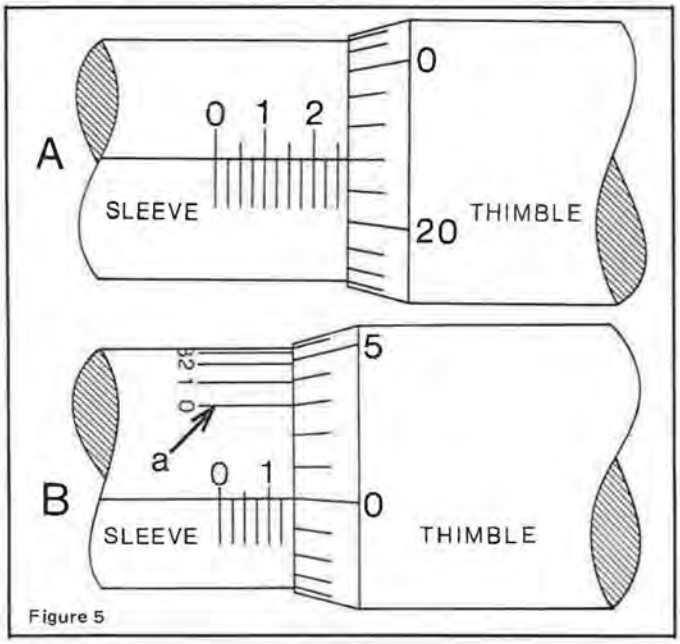


Figure 5

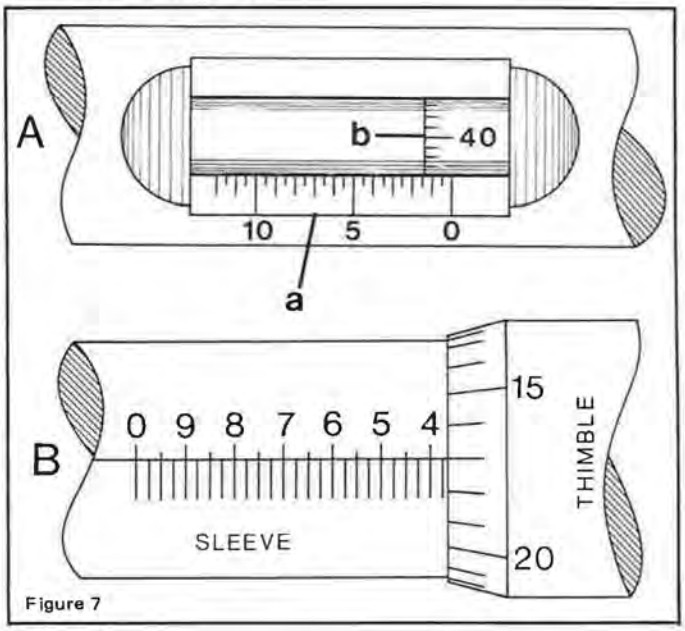


Figure 7

Figure 6

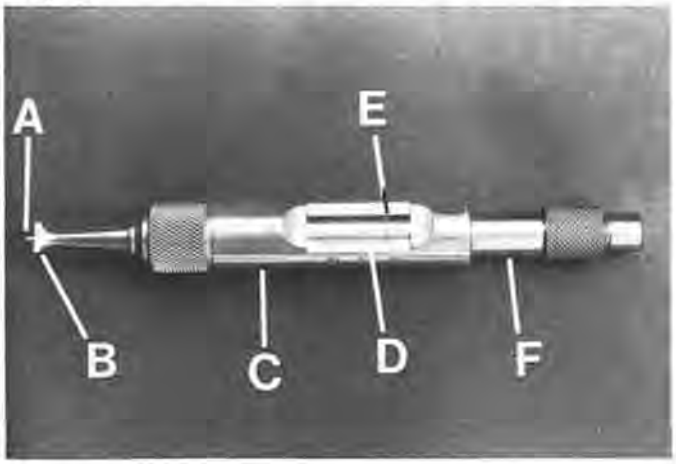
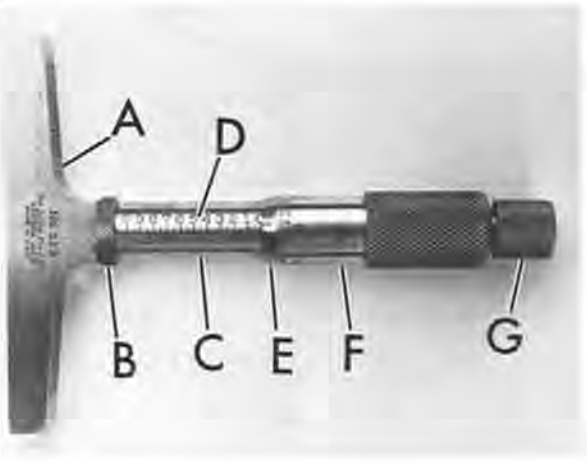


Figure 8



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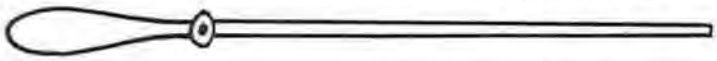
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Henry B. Fried, CMW, CMC, FAWI, FBHI

The Nine O'Clock Jump!

Q I have 45 Quartz G. T. (General Time) 600 Model #73607 Movements that have a weak pulse. They have a second hand of this length:



At the 9:00 o'clock position, the second hand will hesitate and jump, and on some movements will stop. If I put a counterbalance on the rear of the hand, the movements will operate properly. The pulse even sounds weak as compared to a normal operating movement.

Would you have any idea of what the problem could be? Would you have a technical sheet on this movement? I checked the mechanical portion and could see nothing wrong.

Henry Raab
Tomahawk, Wisconsin

A *Many clocks, quartz or others, will stop when the seconds hand is overly long, especially at the nine position.*

Poising the hand has an overall beneficial effect regardless of the cause. However, many clocks which exhibit this tendency after some time in use denote that the clock was engineered without too much regard to the eventual thickening of oil, accumulation of dirt, dried lubricants, wear and metallic shedding. Some clocks and watches with center seconds hands are tested before shipping or even during the post engineering trial process. This test, among others, involves the torque test of the seconds hand.

Your clock most likely exhibits the results noted above when the dial and hands were fitted to a movement which wasn't designed for such torque or weight of the hands.

Your clock evidently did run for quite some time without the poise for the seconds hand. This then denotes what I've mentioned above but also, since there is little else you can do about retroactive engineering, I would suggest that you try cleaning out the clock and re-oiling it. The fault you describe is not uncommon. Again, it shows little ahead thinking about providing the clock with a little bit extra reserve power to accommodate the eventual wear, dirt, and dryness of the lubricants.

Also, there is little available in the form of tech bulletins from Westclox. Later, they imported from the far east.

Q I'm hoping you can help me with a watch and a clock. I need all the information and/or history of the pieces that you have.

The first is a watch (pocket watch?) which is 1¾" square, approximately ¼" thick with a square dial. It winds at the top and has a small bow above the crown. It also has a hinged stand (to be able to set it on a table) that folds snugly against the sides of the case. The name "GOLAY FILS & STAHL GENEVE" appears on the dial and movement. #36710 is stamped on the movement and case back. Also, 309 is stamped above the serial number on the case back. No. 2563 is faintly etched on the third wheel bridge. The back of the case seems to have alternating vertical bands of platinum (I think. . .?) and gold.

The second one is a carriage clock 4¼" tall, 3" wide, 2¼" thick. It has a cylinder escapement and Arabic numerals on the dial. Stamped on the back plate is a lion in profile, facing right. Also on the back of the movement is stamped:

DUVERDRY & BLOQUEL
FRANCE

Thanks for your trouble.

Jesse C. Hileman
El Cajon, California

A *The Golays were highly respected craftsmen and watch finishers in the late nineteenth and early twentieth centuries. They had settled in the Jura region about 150 years earlier.*

The square pendant wind watches date from the 1910 to 1930 period. While they did present an odd style, there was a very practical purpose to the design. Not only did this allow a strong back hinged cover to be used as a night-clock stand, but the square design allowed the watch to be regulated to the one upright position where it would rest nicely in the pocket without twisting around. The Golays produced and finished some fine calibres.

The carriage clock with cylinder escapement, although not as desireable as those with lever platform escapements, is still a nice item. Duverdrey & Bloquel were in business in Saint-Nicolas-d'Aliermont from 1910 until after WWII. Today the Bayard factory still operates this facility, producing modern aram and electrical timepieces. Duverdrey & Bloquel used the lion trademark, producing clocks of modest quality as compared to the higher priced Paris items such as quarter repeating and grande sonnerie carriage clocks.

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Chime and Strike

By Steven G. Conover



The New Haven Strike Movement

This month, we will study a strike movement by New Haven. It is a common mantel clock movement found in many tambour and black mantel cases. The model I chose for this article is the New Haven No. 95, a black mantel clock with four columns applied to the front. The case and hardware have been refinished. Overall case width is 16½ inches.

Figures 2 and 3 are photos of the front and rear of the movement. The New Haven is a count wheel strike movement, powered by loop-end exposed mainsprings. Escape wheel and pallets are between the plates. The pendulum is mounted at the rear of the movement. Brackets are attached to the front of the movement to permit installation of the movement behind the dial. The hammer extends from the rear center of the movement out to the strike side, where it reaches the gong.

The count wheel is located directly in front of the strike main wheel and is driven by a gear on the second arbor. The deep slots in the count wheel are the end points of each strike counting sequence. On this count wheel the deep slots come in pairs, which indicates that the movement strikes both the hours and half hours by means of the gear train. In some strike movements, the center cam merely lifts the hammer at the half hour for the strike, and the gear train runs only at the hour.

To identify the strike mechanism parts, refer to Figures 4 and 5. In this particular movement, the pillars are fastened to the rear plate. This makes it easier to assemble the parts into the rear plate, then add the front plate. Note that Figure 4 is a front view of the strike train, and Figure 5 is a rear view. Remember, both mainsprings must be fully let down



Figure 1. New Haven No. 95 eight-day striking clock.

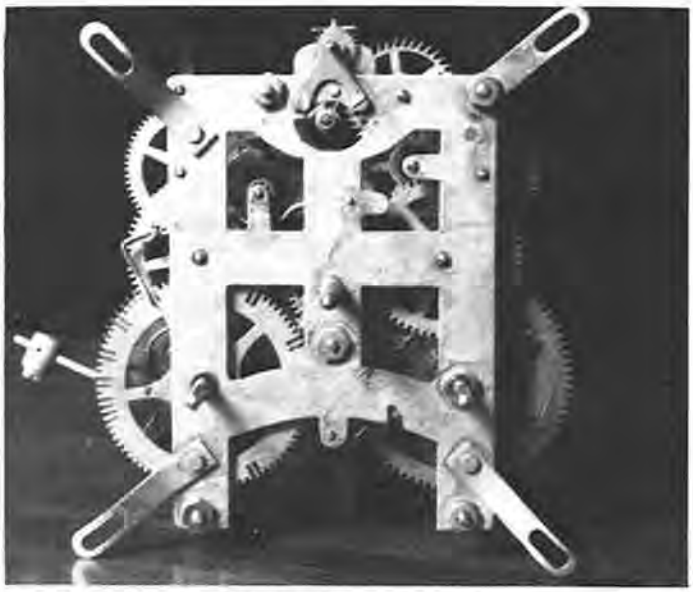


Figure 2. Front view of the New Haven movement.

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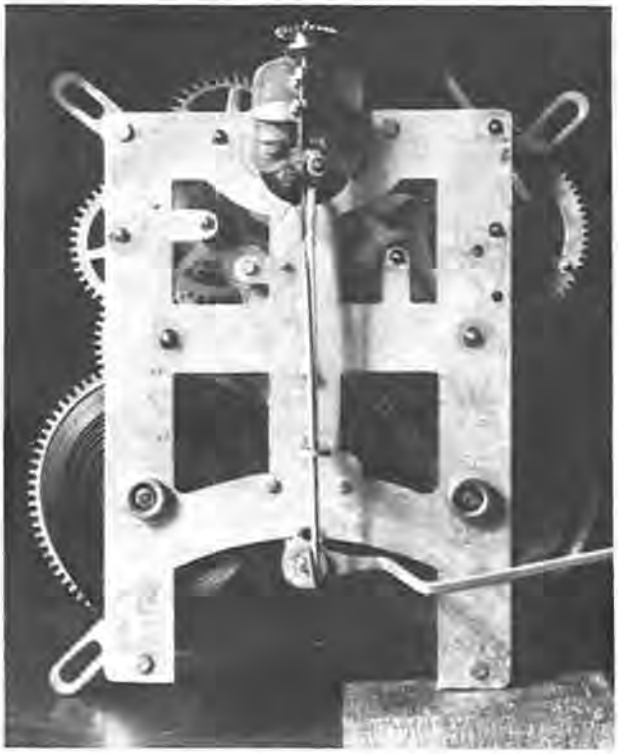


Figure 3. Rear view of the movement.

into mainspring clamps before the plates are separated.

A noteworthy feature of the New Haven strike mechanism is the method of locking. Locking occurs on the cam (6). The drop lever (7) doubles as a locking lever. There is no separate locking lever, and the warning pins (2) are for warning only, not locking. The drop lever rides on the cam, holding the count lever (3) out of the teeth in the count wheel (4). After each hammer blow, one of the two cam slots appears directly under the drop lever. This action permits the count lever to enter a deep slot in the count wheel if the strike count is finished.

Figure 5 shows the one-piece stamped steel lever which is fastened to a stud on the rear movement plate. The lift lever (11) is the lower part of this piece. It takes the lifting action from the center cam (9) before each hour and half hour. The other part of this steel piece is the warning lever (13), which actually has a double purpose. In addition to its warning function, it raises the unlocking lever (10) as the clock moves toward warning. When the drop lever is lifted out of the cam slot, the movement goes to the warning position. The warning wheel (1) rotates about one quarter turn until one of the warning pins (2) is stopped by the warning lever (13).

The other set of strike levers is shown in Figures 4 and 5. The count lever (3), drop lever (7) and unlocking lever (10) are all fastened to the same arbor. This means, of course, that all three move together. At warning, the unlocking lever raises the drop lever and count lever out of their respective slots. When the center cam releases the lift lever, the warning

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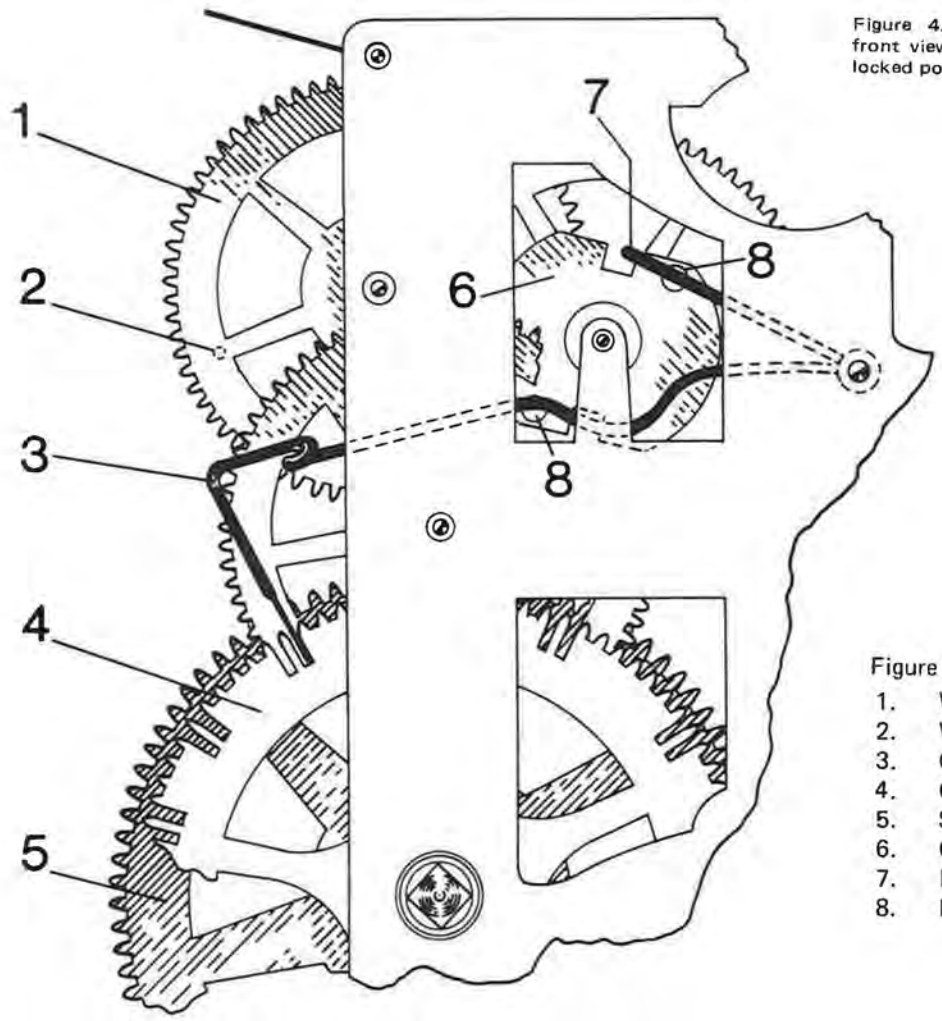


Figure 4. New Haven strike train, front view with the gear train in the locked position.

Figure 4 Parts List

1. Warning wheel
2. Warning pin
3. Count lever
4. Count wheel
5. Strike main wheel
6. Cam
7. Drop lever
8. Hammer lift pins

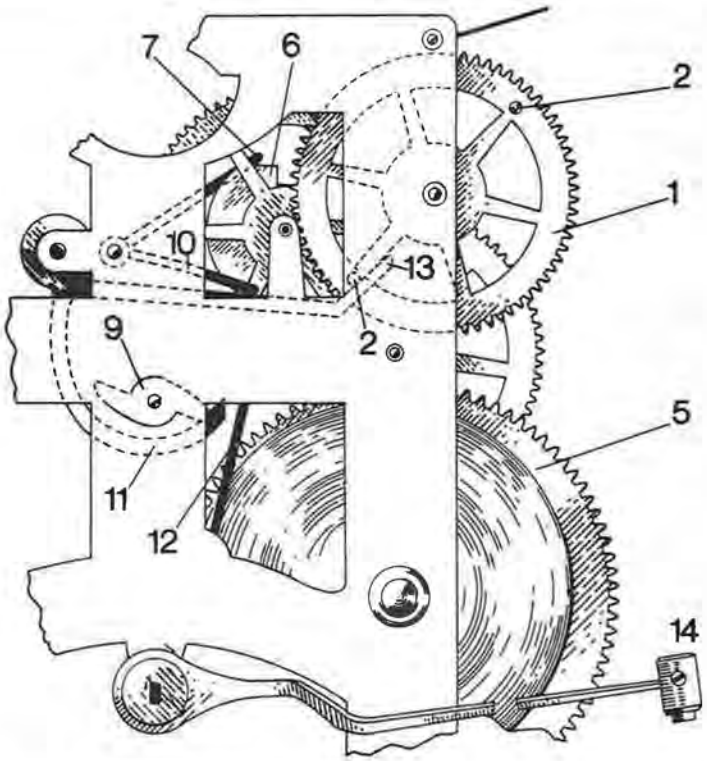


Figure 5. New Haven strike train, rear view in the warning position.

Figure 5 Parts List

1. Warning wheel
2. Warning pins
5. Strike main wheel
6. Cam
7. Drop lever
9. Center cam
10. Unlocking lever
11. Lift lever
12. Hammer tail (portion)
13. Warning lever
14. Hammer

lever releases the warning pin. The gear train runs until the count lever drops into the next deep slot.

One of the major adjustment points in the New Haven strike movement is the cam (6) and its relation to the drop lever (7). A look at the cam reveals that there are two square slots, 180 degrees apart. These are notched from beveled-off portions on the cam. As a result, three different cam positions are created for the drop lever to ride upon—the slot, the bevel and the rim. When the gear train is locked, as in Figure 4, the drop lever is in the slot, locked against the edge. At the same time, the count lever is in one of the deep slots in the count wheel. As the drop lever rides on the rim of the cam, the count lever is held high enough so the count wheel can rotate underneath it. In the third position, the drop lever is on a beveled portion of the cam. During the warning, the drop lever rests there after coming out of the slot. At each hammer blow, the drop lever returns to the bevel as the count lever drops into a shallow tooth space on the count wheel.

It is important to adjust the drop lever carefully. It must go deeply enough into the cam slot to lock on the edge of the slot. But the locking action must also be shallow enough so that the lever will stay *out* of the cam slots each time a slot passes under the lever during the strike cycle. In the locked position, shown in Figure 4, the locking action is safe, yet just over half of the diameter of the lever is within the cam notch. If the locking is made deeper, the lever may lock each time the cam revolves a half turn, no matter what the count wheel indicates. Another version of this problem occurs when the locking is slightly too deep. As the clock strikes, you will hear a clicking sound as the drop lever glances off the edge of the slot following each hammer blow.

To adjust the depth of the drop lever, bend it toward or away from the cam slightly. Notice that the drop lever has a right angle bend near the end, and try not to distort its basic shape. Bending the count lever will also produce a corresponding change in the drop lever. However, you must remember to check that the count lever enters the deep slots as straight as possible. As shown in Figure 4, the knife-edge of the count lever points at the center of the count wheel. When the drop lever rides on the rim of the cam, make sure the count lever is raised safely over the count wheel teeth.

Warning adjustment is rather simple. During assembly, orient the warning wheel as in Figure 4. This will permit a quarter turn warning run before the warning pin (2) hits the warning lever (13). Note that there are two warning pins and for this reason you cannot have a half turn of warning. It should not be necessary to bend the warning lever up or down to adjust it. It is made from flat steel and is not as likely to have been bent by a previous repairer as would a lever made of soft rod. Just check the warning lever to see if it locks safely on the warning pins. If it is too close to the warning wheel or to the rear plate, straighten it.

The lift lever (11) is part of the same piece of flat

(Continued on page 38)

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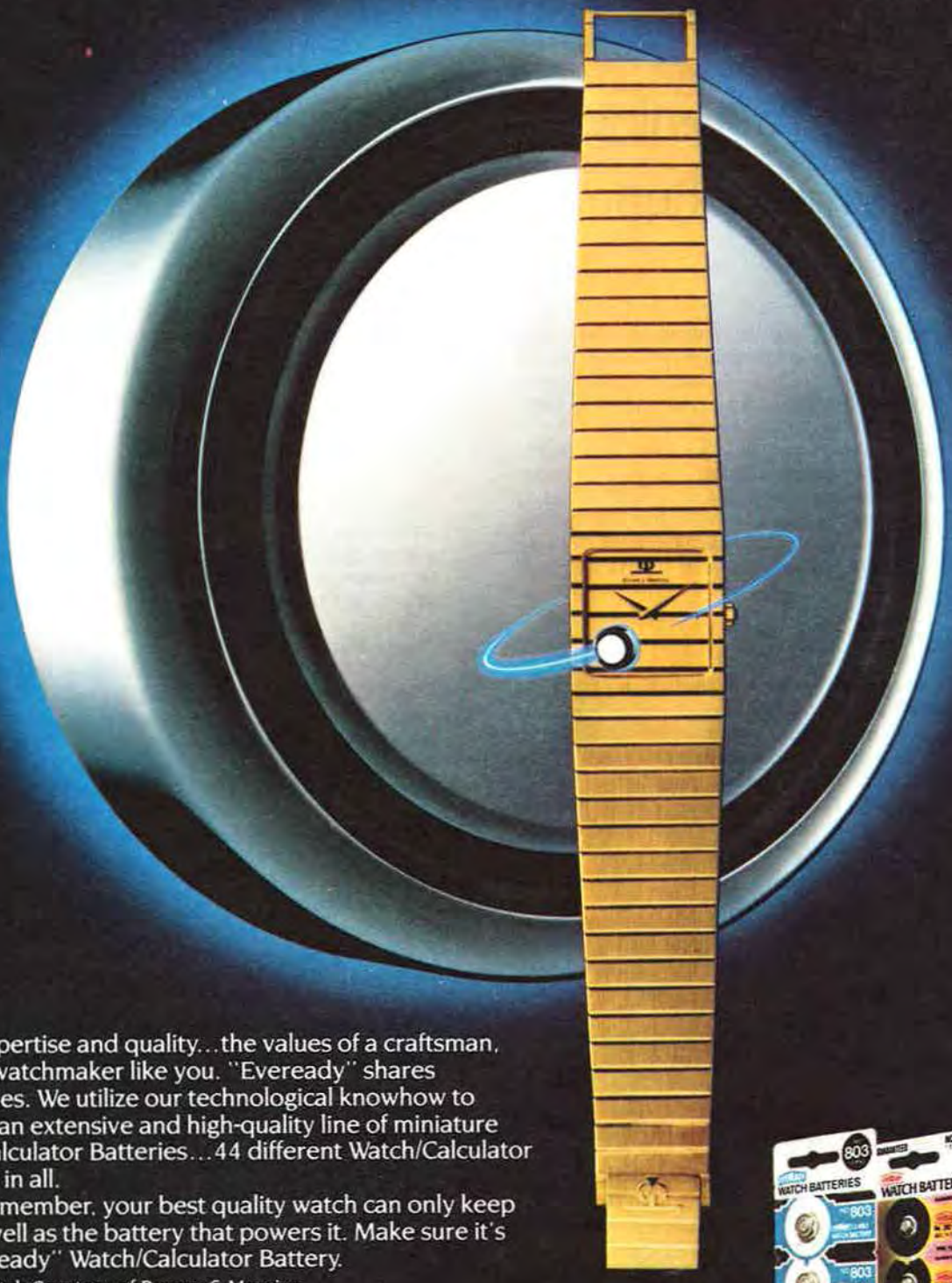
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Methods of Fastening and Bonding Used in Jewelry Repair

Very few pieces of jewelry can be made in one piece, and when two or more pieces are used they must be fastened together. In making jewelry we have to make solder joints, but many other types of fastenings can be purchased as findings for much less than the time spent in making them.

Jump rings can be either made by hand or bought; this holds true for rivets, hinges and bails as well as many other fastening or connecting parts. Even cement (glue) is used as a fastening or bonding agent in some fine jewelry. As jewelry repairmen it is to our advantage to understand all these fastening methods so that we will be able to make strong, attractive and durable repairs.

Solder: What is Available and How to Apply It

When bonding together with solder we should know what is available and how to apply it. Solders come in various types, all applied with heat. Very low temperature solder is probably the most common outside of jewelry work. It is a lead alloy that melts and flows at a low temperature and is used mostly in the manufacture of costume jewelry, although I have found emblems and crests soft-soldered on solid gold rings and other pieces of solid gold jewelry. In some cases where delicate stones or enamels are close and cannot be removed from good quality jewelry, satisfactory repair can be made using soft solder. Gold-alloyed solder is available in 6, 8, 10, 14, and 18 karat in either white or yellow and in easy-flow or hard-flow types. The easy-flow flows at a lower temperature than the hard-flow, which is sometimes referred to as "welding solder." Silver solder can also be obtained in hard flow or easy flow. Platinum solders are made in four melting temperatures: easy (1000), medium (1300), hard (1500), and weld (1700). In manufacturing jewelry, the different melt and flow temperatures are important, but in repairing jewelry the easy-flow solders do a satisfactory job. They also lessen the danger of having places in the jewelry put together with hard-flow solder from coming apart while making repairs. In previous articles, I have discussed many times how to make solder joints, but will repeat it here since soldering is such a large part of jewelry repair.

Ten Steps to Remember

The ten important steps to making good solder repairs are:

(1) Clean
(2) Shape and fit
(3) Dip in alchohol and borax solution and burn off to protect surrounding finish stones, etc.
(4) Apply flux
(5) Apply chip of solder
(6) Apply heat until solder flows
(7) Dip in pickling solution while hot if no stones or enamel are involved
(8) Shape with file (if a ring, round on mandrel)
(9) Polish
(10) Clean in soap and ammonia solution or in ultrasonic tank, rinse and dry.

Using these ten steps works well for me and should for you unless you have found a better and faster way. I would hazard a guess that about 50% of all jewelry repair jobs that I encounter require some type of soldering. Some steps can be omitted on jobs not requiring them.

"Jump Rings" in Jewelry Repair

Jump rings are just split rings made of round wire. These can be used for connecting chains to catches, repairing chains, hanging charms on bracelets and many other connecting uses. Jump rings can be purchased in bottle assortments with rounds or ovals in a large range of sizes, as well as in brass, nickel-silver, sterling-silver, gold-filled, or even karat gold and platinum. Adequate for most one-man jewelry repair operations is a thirty-six bottle cabinet with yellow gold-filled and sterling silver. It has nine sizes each in oval, round, yellow and white.

Jump rings are easy to make by using wire and wrapping it around a rod the size of the hole diameter you want. Wrap it like a coil with as many wraps as you want jump rings. Then with a very fine blade in the jewelers' saw (6/0 or smaller) saw a line lengthwise down the center rod until they separate. These will turn out to be as perfect as manufactured jump rings. If you want oval rings use a piece of oval rod.However, if you have no oval rod it will take only a few minutes to file an oval end on a piece of round rod, or just squeeze a round ring in parallel pliers with the joint facing the plier jaw.

Often when a complaint comes in about a jump ring spreading in the split and becoming disconnected, by making it oval with the split on the side and then making the split tightly closed will solve the problem. Otherwise, the split can be soldered shut with soft or hard solder, depending on how strong a joint is required and if any surrounding material may be damaged by the amount of heat required for hard-soldering. If this is the case, soft solder can be applied with a soldering iron or gun. Not enough heat is required to damage any surrounding material, with the possible exception of pearls or opals.

Riveting

Riveting is a common fastening used in making jewelry, but rivets for repair are not listed in any material distributors brochures or catalogs. Under other listings such as watchband repair material riveting is listed, but they are not

the quality that one would normally use when repairing karat gold jewelry. The best source of rivets that I have found is wire and tubing of graduated sizes from which I can make my own.

Installing Pinstems

Rivets for installing pinstems is simple; all that is required is an assortment of brass and nickel-silver round wire in sizes 14 to 21. A piece of wire can be selected to fit the hole in the pinstem and joint. Chuck it in a pin vise and with the ball end of the chasers, hammer peen it enough to spread the end to form a head. Install it in the pinstem and joint until the formed head is tight against the joint, and cut it off just a little long, then back the head up on a steel bench block and rivet the other end. Smooth the head and riveted end with a needle file, or use a cup bur in the flex-shaft tool. Now polish, and the result will be an attractive, strong-riveted hinge.

Making Hollow Rivets

Hollow rivets can easily be made from tubing. For some repairs on lesser quality jewelry, brass or nickel silver tubing can be used. However, for karat gold jewelry, karat gold tubing should be used. To form the head on a tube rivet, chuck it up in the watchmakers' lathe. Then with a center punch in a hand vise (to give a good hold on the punch) the end of the tubing can be spread by putting the point of the punch in the hole at the end of the tubing protruding from the lathe chuck, exerting pressure while the lathe is turning. This will spread the tubing to make a funnel-like shape on the end of the tube. A little beeswax on the point of the punch will make the burnishing process easier and result in a smoother finish.

A Good Tool
To Make Better Hollow Rivet Heads

For making better hollow rivet heads is the use of a tool that I made for this purpose. I used an old staking punch, annealed it, chucked it up in the lathe, and after cutting it off square turned the end taper so it would be the outside diameter of the rivet head. Then in the lathe, turn a groove between the center and the edge, leaving a protruding point in the center (see Figure 1). Polish this end (including the groove and point) to a high luster. Then re-temper the punch by heating to a cherry red and quenching in water that is room temperature or even warmer. Again polish to remove any oxides.

Next, the temper must be drawn to the hardness needed because it is now flint hard and would be easily chipped. This can be done by slowly heating it until its color turns from a light straw color to a dark straw, and quenched before it turns blue. This should give a hardness that when again polished will serve as a burnishing tool or riveting punch, and will form a rolled edge when used as was previously described for the center punch. When the rivet is installed and cut to the proper length the formed head can be backed with a bench block or anvil and the tool can be then used as a punch and tapped with a hammer to make the riveted end look just like the formed head.

Crests and Signets

Crests and signets are held on drilled stones with rivets going through the stone where drilled. Also some all-metal rings have crests or emblems riveted on. Either stones or all-metal solid and tubular rivets are used. When the holes through the stone or metal top of the ring are small, solid wire rivets are often used and the ends can be riveted using a half-round depression in a punch or simply using a beading tool. It can be hand-burnished with the beading tool, or it can be tapped with a hammer in light taps until a half-round head is formed on the rivet end.

Replacing Rivets on Emblems and Crests

In replacing rivets on emblems or crests, the wire or tubing can be gold-soldered to the crest. Then when put through the stone cut off leaving about 0.5 mm protruding to be riveted. Tubular rivets are generally used when the hole is larger. If it is large enough, a single tube will be sufficient to hold a crest securely without turning if the underside of the stone is countersunk and a groove is cut across the center of the hole. This is done so that when it is burnished tight a narrow punch like a screwdriver end can punch the edges of the rivet in this groove. Caution must always be used and the rivet should be burnished into the countersunk hole with a center punch-shaped tool and tapped lightly to put the edge into the groove with the screwdriver-shaped punch.

How to Fasten

The best way to determine how to fasten a crest or emblem when making a repair is to try and duplicate the original rivet or rivets. Then measure for diameter a tube or wire which is best done by putting it through the hole in the ring top or stone. It should be a snub fit but not have to be pressed or driven through the hole.

In order to install it on the crest or emblem and get it in the exact spot where the old one used to be, make a slight countersink by cutting the old rivet off flush with the emblem, center punching the center of the remaining part of the rivet and using a twist drill in the flex-shaft tool. This can be fluxed as well as the end of the tube or wire with also a little solder flowed on the end of the rivet material. When this solder-applied end is placed in position in the countersink of the emblem or crest, heat can be applied until the solder flows. This will fasten the rivet securely to the crest or emblem. The crest or emblem should be slightly domed. This is done so that the outside edges or corners will touch the base before the rivets are riveted and as they are being tightened, the edges will fit tightly against the base so they will not catch on clothing, etc. Again I will repeat that solid rivets can be burnished or tapped tight using a hollow-domed punch or beading tool, and tubes can be riveted using a centering punch or a tool as shown in Figure 1. It is important to polish the inside of a ring making the rivet heads smooth so no irritation to fingers can be caused by wearing the ring.

(Continued Next Page)

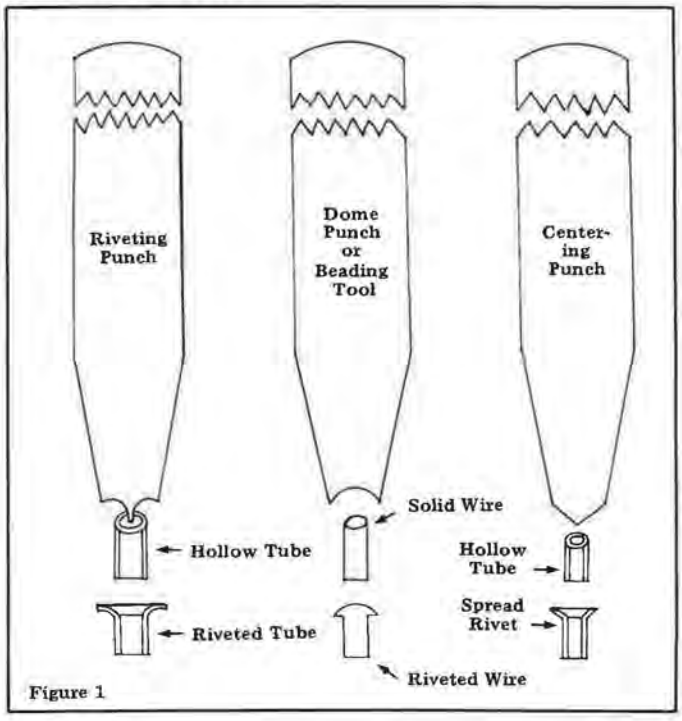


Figure 1

Use of Bonding Agents

The last method I will list is the use of bonding agents such as cement or glue. Epoxy was one of the greatest bonding agents to be marketed until Aaron-alpha®was introduced a few years ago. Aaron-alpha® has a great advantage over epoxy because it hardens immediately. Of course, sometimes this is not an advantage because occasionally it has hardened before the article being bonded was in place, which presents a problem in removing it. All of the instructions that I have ever had on removal of Aaron-alpha® calls for soaking in acetone, but for me this practice was never successful. I have, however, found a method that has worked for me.

The first trial was on a pearl ring with the pearl set on a peg and the pearl did not go far enough on the peg to seat so it had to either be removed, drilled deeper, or the peg shortened. I grasped the pearl between the thumb and forefinger of my left hand and with the mini-torch in my right hand applied heat. The Aaron-alpha®loosened enough to let the pearl come off before enough heat reached the pearl to even slightly damage it. After that I have used this method on jade and other harder and more heat-resistant substances, and even after cooling it I could see that the heat had destroyed the holding power of the Aaron-alpha®.

A Word of Caution

This is not a procedure I would recommend unless the utmost caution is used, for it could result in a damaged pearl, opal or stone, or even burnt fingers. We know pearls and opals cannot stand even the heat of boiling without being destroyed, so if you try this, do it first by experiment before using it with customers' repairs.

One problem that I encounter many times is pearls that are set in four- and six-prong pearl settings with no peg or glue. Usually in a short time these pearls work loose and spin around in the setting, which is damaging to the pearl as well as it draws a complaint from the owner. The way that I have repaired them is to punch out a small disc, drill the center with a drill 0.80 mm in diameter, and solder a small piece of 0.80 diameter gold wire to the disc by setting it in the centered hole and hard (gold) soldering it. Next, it is placed down in the setting or installed from the underside of the setting, and again gold-soldered. With the same 0.80 mm twist drill in the flex shaft tool the pearl is drilled halfway through. The pearl is cemented with Aaron-alpha®or epoxy on the post down in the prong setting. If Aaron-alpha®is used, the prongs can be tightened against the pearl immediately, but if epoxy is used it should be well-set before tightening.

The next article will deal with holding devices used in making or repairing jewelry.

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321	.64	.55	389	.74	.64
323	.57	.49	390	.84	.72
325	.73	.62	391	.67	.57
343	.57	.49	392	.51	.43
344	.93	.79	393	.74	.64
350	.96	.83	394	.78	.67
354	.73	.62	395	.73	.62
355	1.79	1.53	396	.71	.61
357	1.11	.95	397	.73	.62
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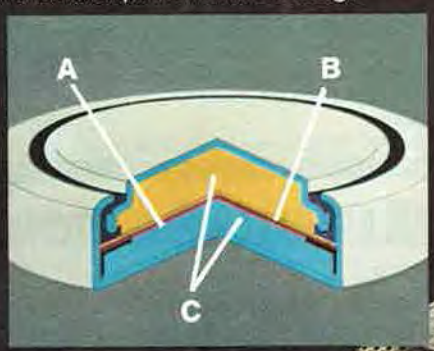
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THE BROCOT ESCAPEMENT

Part II

By A. L. Rawlings and J. E. Coleman

Part II––J. E. Coleman

Brocot ventured for the first time to England in 1845. British horologists marveled and the English customs people did not believe the importer's declaration figures sufficient. Thousands of diverse emotions stirred him in this unexpected success.

He invented, a little time after, his perpetual calendar, a type so simple people disputed that such a considerable multiplicity of effects could be obtained. The exposition of 1849 spread his fame to foreign lands and as soon as an extraordinary piece was asked for, Brocot would only combine the proper mechanism and find the right artistic casing. The regulators with glasses really date from him. His success in Russia, and the sympathies he had acquired there, caused him to settle in St. Petersburg. Miscounting of all sorts obliged him to come back to Paris, not discouraged but a little mortified by his voyages (travels). He did not delay in agreeing with his successor for an association and then he set himself back to work.

To be a calculator and a man of taste are qualities which are not easily found together. Brocot possessed them to the highest degree. It is in the midst of his drawings that he worked on the pendulum and on the main spring theory. His process for train calcuations by approximation are of a genuine learned gentleman (see Figure 12). He, by his own reckonings, constructed a great number of cosmographic movements, all remarkable for their precision and ordinance.

Of his leisure, which he had prepared himself for at the end of his life, he gave a great part of his dominant passion–he made a series of discoveries on surface measures, on the conditions of parallelisms and on elementary geometrical questions which were welcomed with great admiration. As for his work on the ellipse, circular projection and his researches in the numbers, their squares, their cubes and roots, more than a few learned men have been siezed with astonishment at his originality and simplicity of method. It follows that at the end of his life, there is great admiration for a gentleman who has fulfilled his life by doing many services for people, and by giving the best of himself to the art of horology.

(s) A. REDIER.

(End translation.)





Figure 1 (left): Brocot escapement set up in depthing tool for pallet adjustment. Figure 2 (right): French visible Brocot escapement. Marti, Paris.

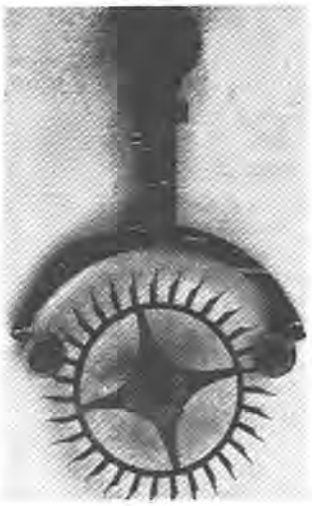


Figure 3 (left): Early between-plates Brocot escapement on Milroy Freres, Paris, No. 733. Escape wheel 31 teeth, diameter 38.2 mm. Distance between pallets, 27.4 mm. Span, 13½ teeth. Turns right.



Figure 4 (bottom, right): Ansonia Brocot escapement. Escape wheel 30 teeth, diameter 23 mm. Distance between centers, 19 mm. Distance between pallets, 19.5 mm. Span, 10½ teeth. Turns right.

One wonders whether or not Mr. Redier endeavored to inject the type of "Gallic charm" indicated into the papers mentioned by Baillie. Only two listings appear under Brocot in Watchmakers and Clockmakers of the World (Baillie, 2nd ed., 1947). There is no given name for the first listing, merely: " . . . Brocot, Paris, 1824 C." The second: "Achille Brocot, Paris, born 1817, died 1878. An eminent maker. Devised the form of anchor escapement and the adjustable pendulum suspension known by his name, and the free escapement called 'd'mise d'aplomb seul.' "

Despite the scarcity of data on A. Brocot, it had a habit of coming in in pairs. Within the same week, Mr. H. E. Reum (Oak Park, Ill.) and Mr. Malcolm Gardner (12 Earnshaw St., London), sent copies of an article in the September, 1895 issue of The British Horological Journal by E. Herman Horstmann titled "The Brocot Pin Pallet Escapement Applied to English Clocks. How to Make and Repair." Mr. Gardner also

enclosed an advertisement of the Brocot suspension by Louis Brocot, Jr., in the February, 1880 issue of B. H. J. (Figure 11).

Figure 5 (right): Waterbury Brocot escapement. Escape wheel 30 teeth, diameter 22 mm. Distance between centers, 25 mm. Distance between pallets, 21 mm. Span, 11½ teeth. Turns right.



Figure 6 (bottom, left): New Haven Brocot escapement.



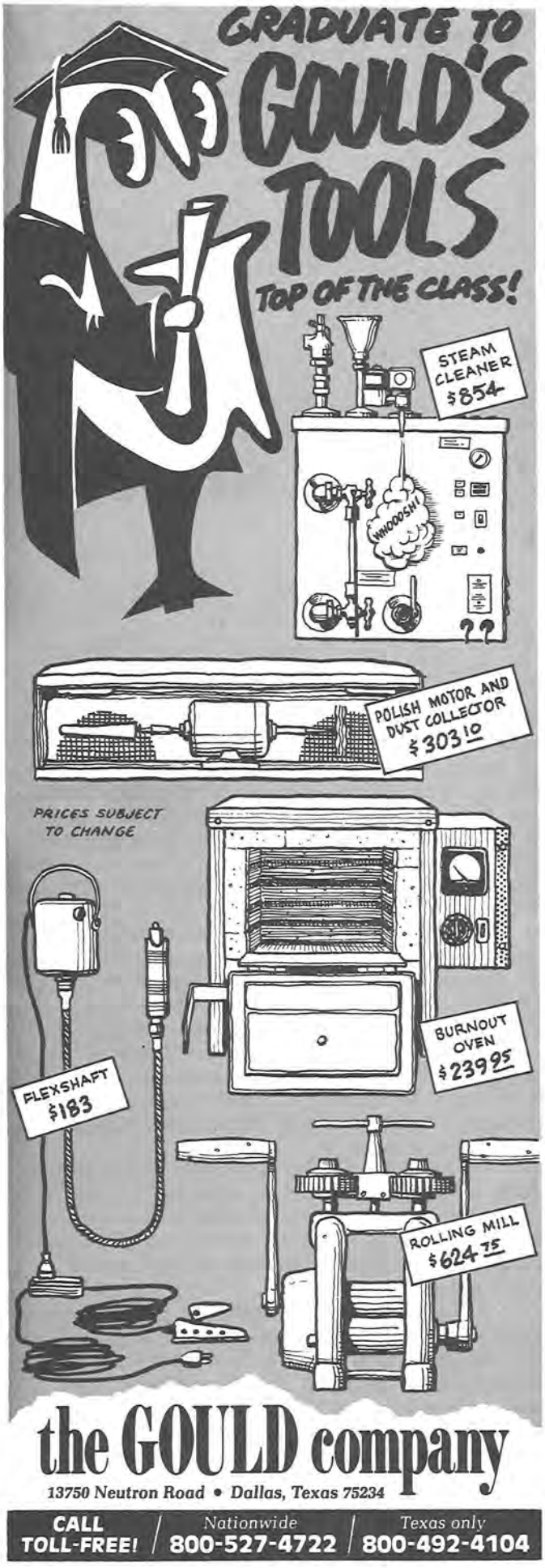
While accurate and to the point, the Horstmann paper does not contain anything new and is too long to quote in full here. One of its opening paragraphs is significant in the light of what we shall mention about the Gilbert escapement and the DeLong escapement later. Quote:

"This Graham escapement was replaced by a Brocot pin pallet escapement of exactly the same dimensions, and the results were perfectly satisfactory, the clock keeping splendid time. Now, this was a seconds pendulum clock, and with very little weight to drive it, two facts which are not generally known, for this escapement can be applied to clocks from the largest to the smallest, while the power required to drive it is considerably less than that required for an anchor recoil escapement. There is one other point worth mentioning before we proceed with the construction, and that is unless it is fairly accurately made, it will not go at all."

With the obituary notice, Mr. de Woyna enclosed a one-page typed article in French on the escapement and the Brocot family. I am grateful to Mr. Joseph Sternfeld for this translation of it.

Part III of **The Brocot Escapement** *begins the Sternfeld translation. Watch for it in next month's issue.* NAWCC

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THE ROCK QUARRY

By Fred S. Burckhardt



How to Get to Your Customers

After all these years, I've finally come to the conclusion that my estimating of watch repair leaves a lot to be desired. I came to this realization after spending some time taking lessons from a friend of mine who estimates auto repair. This guy is an expert. I've seen him make customers cringe with fright without uttering a word. His guttural sounds are enough to unnerve the bravest of souls. I'm going to pass on some of these tricks to you, beware as to how you use them. They are not to be used on those who are faint of heart or recovering from a nervous breakdown.

The whole idea is to make the customer feel as uncomfortable as possible. Let them know right off that you are the estimat*or* and they are the estimat*ee*. When taking the watch from your customer, don't say a word. Look at it for a minute, turning it slowly in your hands and just make one sound, "WHEW!" If you put enough emphasis on this, the customer's smile will immediately turn into a frown. It's fun to watch the corners of the mouth turn down and furrows appear in their foreheads. When this happens, you know you are on the right track.

Step 2 takes a little practice. When you walk to your bench, lay the watch on the bench plate and as you sit, heave a deep sigh. This is very effective if timed properly. Look at the customer out of the corner of your eye. If the furrows are deepening and tiny beads of perspiration are starting to appear, you're on your way.

Now is the time to really start your act. Always make it look difficult to open the case. As we all know, you'll have to fake this as all cases are easy to open. Once the case is open, the supreme test begins. A short, but distinct, "Hm" is in order. After a second or so, give the customer a quick glance then loupe the movement. A longer "Hmmm" should be sounded at this time. Accompany this with short, quick, side to side movements of the head. This is enough for now. Lay the movement on the plate once more. Flip up your loupe in a careless manner. If you smoke, light up a cigarette. If you don't smoke, light up a cigarette. Take a long puff, inhale deeply and lightly rub your fingers across your forehead. Make sure you don't use the same hand that's holding the cigarette. Burning yourself at this time could break the whole spell. After another puff or two, put out the cigarette, take another quick glance at the customer and continue looking at the watch.

The customer may start to ask questions, but don't answer. Keep looking at the movement. If it's a mechanical watch, take out the balance. Even if it isn't necessary, it still looks very impressive. By this time the customer will be either sitting or lying on the floor. If on the floor, a cup full of cold water will revive them.

You will find that your customers will become fretful and apprehensive. You must strive to put them in this condition. Little do they realize that the best is yet to come. Pick up your calculator and start to push buttons. The more you push, the more of an agonizing effect you will produce. When you feel the timing is right, scratch your head and start over. This action will turn strong men to jello; elderly women will lose the blue tint in their hair turning it white once again; young women with children will gather them around her in a protective move much like a mother hen with her chicks.

Now is the time to make your final move. Tell them how much it will cost for the repair. If you followed the steps as outlined, they will agree no matter what the price.

If you want to go all out, take the watch apart completely. If they don't want it repaired, charge for putting it together. I don't like to do this because even though I'm a whiz at taking them apart, I have trouble getting them together again.

Regardless of which method you use, when the customer starts to leave, be sure to say, "Have a nice day!"

Now I'm sure some of you may think this is a rather sadistic way of doing business. You must remember, if you can't get to your customers, who can you get to? Besides, this may be the only fun you'll have all day. TIMES

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SHOP TALK



By Wes Door, CMW

Fitting Attachments

The old saying that a chain is only as strong as its weakest link is certainly true in fitting attachments. First let's start with definitions of terms that are usually encountered in our trade and that we will discuss in this article.

Attachments: This term refers to watch bands, metal or leather, nylon or plastic, etc.

Straps: This term usually refers to watch bands other than metal.

Cord Bands: These are nylon, leather or other types of bands used mostly on ladies' watches having two lugs (instead of four). See Figure 1-A.

Lugs: The ends of the case which contain some means of holding the watch attachment to the case are called lugs. Usually "men's" style cases and "ladies' or men's" sport types have holes drilled through the lug ends (see Figure 1-C), or half-drilled holes, shown in Figure 1-D. Lugs on small "dress" type ladies' watches usually have a lug in the center of each case end (Figure 1-B), designed to accept either a metal expansion band or a metal link, mesh or other style of non-expansion band or a "cord" type nylon or leather band.

Solid Lugs: This refers to an old style in which the lugs and spring bar area are one piece, thus having no removable spring bars. See Figure 2-A. Bands fitted to this type must be able to open on the ends so that the ends may fit over this solid "built-in" bar. See Figure 2-B.

Built-In Lugs: Sometimes referred to as "solid lugs," but not to be confused with the solid lug type explained above, are the built-in lugs. The band end-pieces are actually built into the case ends and become an integral part of the case. See Figure 2-C. When selling this type, a good explanation should be made to the customer that this band cannot be replaced without the complete case, or that it can only be replaced with the same style and probably only from the original manufacturer. Many times this replacement is not available. An option may be to replace the band with a similar type from a different company (which, of course, may not match) or to repair the old band. At the point of sale one should explain these options to the customer.

Built-In-Effect: This term is used as a selling tool to explain to a customer that a watch actually has a "built in" solid look inasmuch as the attachment matches the case However, the watch has removable spring bars so this band can be replaced if and when necessary. Also an added selling feature may be that an expansion band (or one other than original style) may be fitted to the same case should the customer desire either right then or at a future date. See Figure 2-D.

Some manufacturers of these watch cases have drilled the case lug holes without allowing sufficient clearance for another band to be installed. In these cases the band must be replaced with the same style as the original.

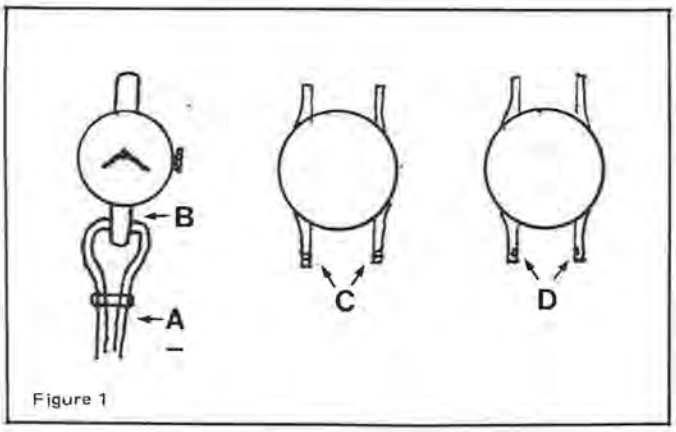


Figure 1

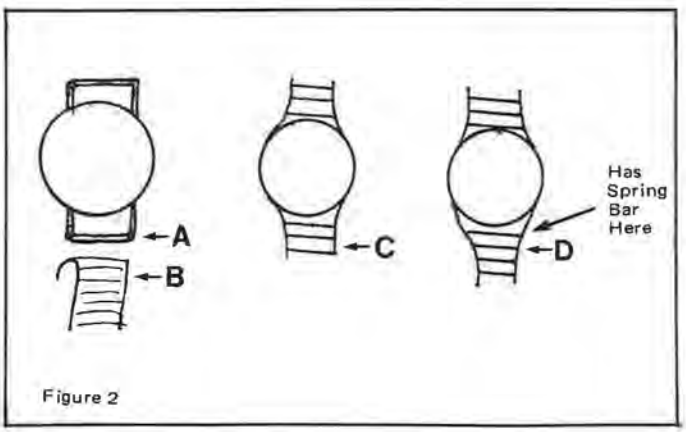


Figure 2



Figure 3

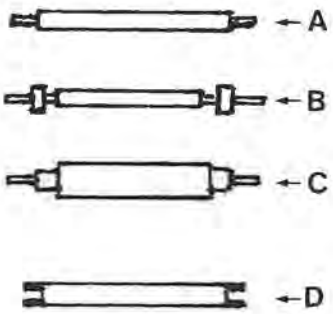


Figure 4

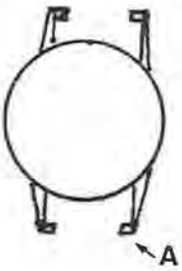


Figure 5

Semi-Expansion: This term refers to a band having large solid end-sections with an expansion section in the center. The one shown in Figure 3-A is one of the more common types seen today and has a solid metal end-piece with inlaid turquoise.

Since the customer wants to replace only this center expansion section, we must stock special extra short bands (which many times are of the matching low quality of the original). A more desired answer is to sell and fit our finer quality band, and of course remove maybe 20 links or so to re-match the length of the original.

The only problem may be in fitting the band end-pieces to the slot in the customer's turquoise end-pieces. See Figure 3-A. The width of the new band end-pieces must be reduced to match this "slot." If our new band has solid end-pieces, then we may reduce this width by filing, cutting or sawing. Most newer bands have "telescope" adjustable ends; however, it will be necessary to completely remove these adjustable ends and the inside coil spring in order to open up the end-piece to fit it onto the turquoise section. Fortunately, the normal slot width seems to match the new "solid" width of most of the watch bands.

Spring Bars: This is the correct name for the spring-loaded bar that fits through the ends of the watch band and fits into the pre-drilled case lug holes (sometimes called "pins" by customers). Spring bars come in many widths, styles and sizes and we must use proper care in our selection of the proper spring bars for each job. Figure 4 shows the normally used styles of spring bars.

Single Step (or regular) Spring Bars: Figure 4-A shows "single step" type spring bars. This type may be used for cases having fully drilled lug holes. Since the body of this spring bar is solid, the only way it is designed to be removed is to push on its spring-loaded ends which are exposed due to the "through" hole in the lugs.

Double Flange Spring Bars: These have a flange as shown in Figure 4-B and are used in the hidden lug type (referred to in this article as "half-drilled hole" types). By placing a screwdriver behind the flange and exerting an inward pressure (toward center of spring bar), the spring bar, with the band, is easily removed. Band manufacturers leave a small cut-out area on the back side of the band end-pieces to facilitate removal. The one exception to this rule may be a handmade turquoise type of band (described above), without any cut-outs. See Figure 3-B. It is easy to pre-cut a groove or slot into one side on the back of each band section with a small file. If this has not been done and the band is already on the watch it may be removed by using a jewelers' saw and cutting through one end of the spring bar. The saw should be placed between the band and the case lug.

Double Shoulder Spring Bars: These have an extra shoulder cut, instead of a flange. Incidentally, a good method when fitting leather straps or any band that might not hold properly with double flange or double shoulder spring bars is to use the Single Step type, which will hold tight but necessitates later removal with our cutting method described above.

A good test to make after fitting any band is to hold the watch in one hand and pull on the band with a sideways pressure with the other hand. If the spring bar pops out, it was not the proper one. Also, we should examine the lug holes making sure they are drilled deep enough.

Female Spring Bar: As seen in Figure 4-D, these are designed with a hole in each end to fit over the male-type lugs. See Figure 5-A. They are mostly seen on a few older watches, especially those having a high gold content (like 14 or 18 Karat), and where the lugs taper down to form ends too small to allow for holes to be drilled in the lugs like conventional styles.

Curved Spring Bars: These may be purchased, or formed into the proper curve, with a special tool available from wholesalers. A good stock of spring bars is very important, and proper attachment fitting is a must for the quality of work that we like to turn out.

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WATCHES *INSIDE and OUT !*

EDITOR'S NOTE: Many watch repair techniques are timeless--the same procedure that solved a problem in the past may work equally as well today! In a constant effort to serve our readers better, the editors of HOROLOGICAL TIMES magazine are proud to present a new feature--"WATCHES–Inside and Out!"

These columns will explore a variety of subjects in future issues. Some of the articles will be reprints of information that has appeared in this magazine or other publications. Some will be published, here, for the first time. ALL of the articles will be designed to help today's watchmaker do his or her job more easily and to operate a more profitable business as a result!



THE MAINSPRING BRIDLE

by Harold J. Herman, CMW

Part 2 and Conclusion

Explanation is due from last month's article on what to do with the riveted or peened barrel and the sealed standard snap barrel when it needs adjustment. Both of these barrels do not have a cap opening for access for our new adjustment technique. In the case of the peened or riveted barrel, the lathe can be used with a drill measuring approximately 0.40 mm. The center punch should lightly dent the area to be drilled. Estimate the thickness of the barrel wall and aim the punch at the inside of the wall. Drill a hole at that spot through the brass cap, but be careful not to apply great pressure so that the drill does not burr the bridle or mainspring. Figure 1 shows the hole drilled and the excess brass removed from around the



Figure 1. Riveted or peened barrel.

hole that is raised during the drilling process. The removal of this burr is important because on most watches the barrel cap rides very close to the hour wheel and a random burr raised when the barrel moves around to the hour wheel could catch and stop the watch. Granted, the aforementioned method is not an ideal one, but the only answer other than a complete unit replacement.

Figure 2 shows a sealed barrel regular snap type barrel cap that has a V slot filed into it with a triangular file. Figure 3 shows the same cap after a rat-tail file has ovaled the slot. The triangular file was used first in order to make a groove for the rat-tail file to fit in. If you are especially skilled and decide to use the rat-tail file only, be careful that the file does not randomly slide around the perimeter of the lid, reducing the diameter and snap quality before it bites into the cap. After the filing is completed, the burrs raised on both



Figure 2. Sealed barrel snap type cap with V notch.



Figure 3. Sealed barrel snap type cap with oval file out.

sides of the barrel cap must be removed. Work tweezers skin the burrs off nicely. The cap is replaced as in Figure 4 and access is available to this barrel bridle now just as it is in Figure 1.

Figure 5 shows a self-winding watch that has a square cut out of the cap at the factory. Using the assembled cleaning and lubricating methods, if the barrel bridle does need adjustment, consider yourself fortunate if the barrel stops at this position. If it does not and is hidden, drop the pallet



Figure 4. Sealed barrel snap type cap with filed access opening.

fork and a slight wind will bring it to an accessible position. Replace the fork.

At this point, there have been described three different style barrels that all need adjustment from checks made by the wide bladed screwdriver and covered in Part 1. The bridles in these barrels are either too tight, causing re-



Figure 5. Self-winding watch with factory cut out.

banking or galloping, or too loose, causing overnight stopping and less than ideal balance motion, causing undependable timekeeping qualities.

Figure 6 shows two items found at your local supplier. On the left is No. 0 oilstone powder and on the right is bridle grease or bridle lubricant. These two items will properly adjust bridle tension in almost every barrel that needs adjustment, *without removing the mainspring and bridle from the barrel.* If a bridle is slipping around the inside circumference of the barrel, use a jewel screwdriver (0.50 mm diameter), dip it into watch oil, wipe the blade with a towel, and place the tip into the oilstone powder. A minimum amount of oilstone powder will be held to the blade. See Figure 7. Remember, a very small amount of powder is going to do a lot for a slipping bridle. If the bridle still slips add a little more powder between the *bridle and the barrel wall.* Special care should be taken that the powder is placed there. It is not hard to be fooled and errantly place it between the bridle and outside



Figure 6. No. 0 oilstone powder and bridle lubricant.

coil of the mainspring. If this should be done, upon testing the bridle slippage, you will find no change in the error. See Figure 8.

If a barrel bridle is too tight, a clean screwdriver blade is used to place bridle lubricant between the bridle and the wall of the barrel.

The great advantage of using oilstone powder and bridle grease is that they can be used together. The too loose bridle that had been given the oilstone treatment and grabs



Figure 7. Screwdriver 0.50 mm diameter after being coated with oilstone powder.

or becomes too tight can be retreated with bridle lubricant to aid slippage. In reverse, the too tight bridle that was treated with bridle lubricant and becomes too loose can be retreated with oilstone powder to stop slippage.

The question that must arise in the reader's mind is what damage oilstone powder will do to the bridle or barrel

(Continued Next Page)

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Figure 8. Placing oilstone powder between bridle and barrel wall while barrel is held by pin vise "full wound."

wall and what length of time this treatment will last. After many watchmakers used this method for 18 years, no appreciable wear was noted either at the barrel wall or at the bridle. It is believed that the oilstone powder imbeds itself in the softer material which is the barrel wall. The relatively thick steel bridle showed no wear. The consistent tension of the bridle lasted as long as bridles adjusted by other methods.

In recent years, manufacturers have been using the anodized barrel. Their development of this barrel has drastically reduced the number of barrels needing adjustment. Hats off to the progress of the watch companies. But as we all know, we will be seeing the older brass barrels for many years to come.

A word of caution when working with oilstone powder is that special care should be exercised that it be placed only between the bridle and barrel wall. Careless use will cause damage.

Direct all questions to Horological Times, P.O. Box 11011, Cincinnati, Ohio 45211. ☐



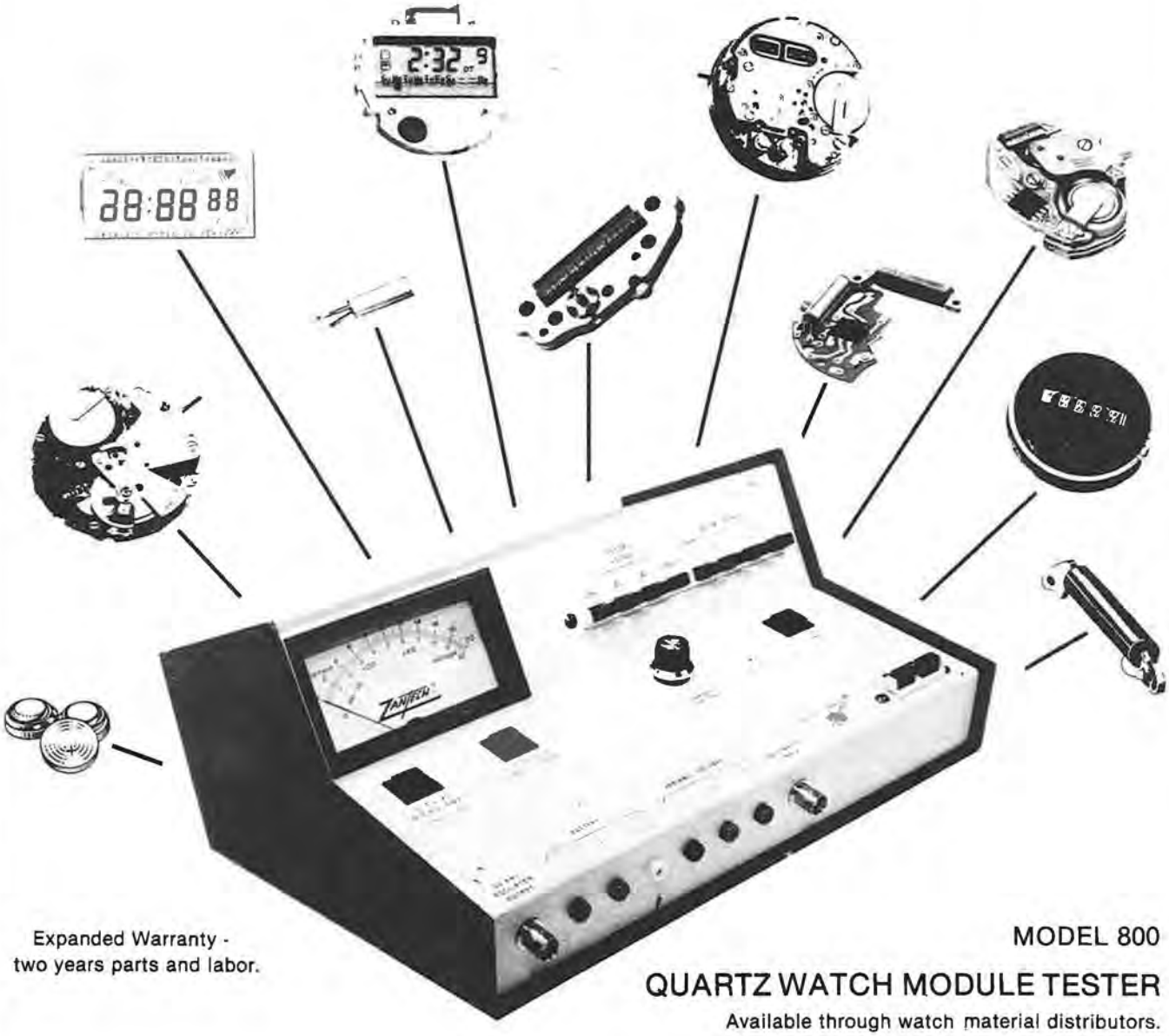
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Affiliate Chapter Column / Robert Allis



Submit Your Recommendations

Here it is, April and spring already, I wish that someone would slow down the march of time. It seems that no matter what I do, I continue to get older by the day. I don't like it, but at least it's better than the alternative. As I look at the calendar now, I can see that it is only two short months until our annual meeting and I would like to take a little of your time and some space here to brief you on the coming meeting.

As you probably know by now, the Affiliate Chapter meeting will be held this year on Friday, June 24. The purpose of this meeting is to discuss and recommend to the AWI Board of Directors changes that we deem may be of assistance to the both of us and to that goal, we will submit recommendations for the board to accept or reject. Most of our recommendations will be accepted if (1) they are submitted in the proper manner, and (2) do not require a change in the constitution. Just remember that we are only a small portion of AWI as an individual chapter, but an integral part of that organization and so we may contribute helpful criticism for the good of all concerned.

Your delegate should be informed as to your wishes and to vote accordingly. If your chapter has any recommendations or proposals to present before the meeting, please submit them on your report form (which you will be receiving shortly) in order that all delegates may be able to see them in advance and thus save time at the meeting. We can then discuss and act on them knowledgeably. This may sound rather petty to some of you, but I can assure you it isn't. At the first Affiliate Chapter meeting I attended in 1977, several recommendations were submitted but none were accepted. Last year six recommendations were forwarded, and all were accepted by the Board of Directors. This just shows what a little planning and foresight can do.

This meeting is actually the only time that we as affiliates can have our say. If you feel that there is anything that needs to be corrected, this is the time to say so. Just do it through the proper channels and your voice will be heard. In the meantime, if you have not yet selected your delegate, do it NOW and submit his or her name to AWI so that they may receive their delegate's packet. Also, be sure to fill out your report form and return it to AWI as soon as possible so that a copy may be sent to all the other delegates for perusal.

TIMES

NEWS ...from all around the ASSOCIATION...

Florida Convention

The Florida Watchmaker's annual convention was recently held in the Miami area. Mr. James Lazarus, President of L & R Manufacturing Company, spoke to over one hundred watchmakers and their spouses. In spite of the fact that Mr. Lazarus heads the leading manufacturing firm producing ultrasonic cleaning machines and chemicals for the jewelry industry, he spoke very little about his own industry, and instead concentrated on such topics as the economy, the political scene and the future for businessmen in general.

An animated speaker, Mr. Lazarus challenged the audience with an open dialogue spiked with humorous anecdotes designed to motivate and stimulate an industry hard hit by technological changes in the watch field. Lazarus addressed this issue by stating that, "We've let some time slip by us . . . not intentionally, but nevertheless, we watched the changes and didn't respond. Now is the time to respond. You are all gifted craftsmen and technicians and surely you can conquer electronic watches." Mr. Lazarus went on to point out that the industry is beginning a new era—and everyone involved in the watchmaking field can prosper—IF they react in time.

MICHIGAN

The 29th Annual Convention of the Michigan Watchmakers' Guild, Inc., will be held this month at the Doherty Motor Hotel in Clare, Michigan. Sean (Pat) Monk will be the convention Chairman.

Included in the convention will be two new AWI Bench Courses. One presented is on Quartz analogs (new models ESA/ETA/Pulsar to be named) and the second is "Repairing the ESA 900, 911, etc.," both to be given by instructor Jim Broughton.

Also at the convention will be a ladies' program on "Antiques," given by Irene Green. The ladies are asked to bring their antique items to this session. Jack Schecter of Seiko is scheduled to present slides and a sound film titled "New Tools and Service Tips," and Jim Krol, C. G., will present a program on jewelry appraising entitled "The Professional Appraiser's Responsibility." Election of new officers will follow these programs on the last of the 3-day convention.

The dates for the 29th Annual Convention are April 15, 16, and 17. For more information and/or reservations, contact the Michigan Watchmaker's Guild, 1202 Catalpa, Royal Oak, MI 48067; Ph. (313) 548-6614 (Tues., Wed., and Thurs.).

NEW YORK

The topic, "Watch Casing Made Easy," was presented at the recent meeting of the Horological Society of New York, Inc. The program, made by Robert Bishop, showed how to open and close many of the cases that give watchmakers difficulty. Special tools were also demonstrated, including specific methods for Seiko, Rolex, and Omega cases.

ILLINOIS

The 1983 Central Illinois Watchmaker's Association new Board of Directors is as follows: Scott Robbins, Gordon Robinson, Duane Laramee, Jack Donovan, Mary Ann Bilyeu, Charles Ramsey, Robert Leach, Ben Smith and Joe Temperelli. The 1983 Officers are the following: Charles Ramsey, President; Ben Smith, Vice President; Mary Ann Bilyeu, Secretary; and Gordon Robinson, Treasurer.

This year's convention of the CIWA will be held Oct. 8 & 9 at the Holiday Inn in Decatur, Illinois.

ARIZONA

The program titled "Basic Electrical Knowledge for the Watchmaker" was presented by Central Arizona Horological Guild's own Dr. Joseph Baier, Ph.D. This was a hands-on program covering the fundamentals of electricity, conductors and insulators, capacitors, inductances; coils—air-core, iron-core, as well as measuring devices involved in this specialization. Dr. Baier also covered how to select range with certain measuring devices and precautions to take in their use.

Coming up on May 15 and 16 will be the 1983 Arizona Horological Convention. It will be held at the Francisco Grande Resort in Casa Grande, AR.

MINNESOTA

The Minnesota Watchmakers Association held their 57th annual convention just recently in Minneapolis. President Troy Shult invited AWI President Marshall Richmond and Buddy Carpenter (AWI Citizen Quartz instructor) for their expertise. Marshall's presentation on Practical Jewelry Repair was excellent. Buddy Carpenter's bench course was presented also, covering basic meter work necessary to service step motor watches.

The new President of Minnesota Watchmakers Assn. was elected and is Maurice Grundei, of St. Paul.

OHIO

Al Gruenig, Executive Secretary of the Watchmakers Association of Ohio, reports that the recent seminar was well attended. Thirty-five watchmakers gathered in Perrysburg, Ohio for the course which was presented by Les Smith, Instructor for the American Watchmakers Institute. Robert Vandergriff represented the WAO Membership Committee and signed up three new members plus a new Credit Union member.

President Al Brehl reminds OWA Credit Union members that the Directors have voted to lower the interest and change some policies concerning loans to members. Those interested should inquire about the new regulations. Credit union services are open to WAO members and their families.

President Brehl extended the sympathy of the entire organization to the family of Ignatios Pietrow of Parma, Ohio, who died February 25. He had been a long-time member of the WAO.

VIRGINIA

Ray Riley, past president of the Horological Association of Virginia, died of a heart attack recently. He was well known to watchmakers in Virginia and across the country.

He was membership chairman of the HAV for many years and worked diligently to bring new members into that organization as well as the national American Watchmakers Institute. He was the HAV's area representative for AWI.

Early in his career he trained many watchmakers to service Accutron watches before Bulova, the manufacturer, began their own traveling workshops. He was always willing to help his fellow watchmakers learn more about the trade. He will be greatly missed by his many friends.

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TECHNICALLY WATCHES
(Continued from page 12)

ble scale in View E and the internal thimble in View F. Measurements are made between the end of the base and the end of the spindle.

Figure 7, View A shows a drawing of the scales of this depth micrometer. Point "a" shows the linear scale on the sleeve, and Point "b" shows the scale around the internal thimble. Scale "b" has 50 marks with each 10th mark being numbered from 0 to 50. The pitch of the screw on the spindle is 0.50 mm or 20 threads per centimeter. The linear scale "a" on the sleeve is graduated in millimeters and half millimeters. The scale is from 0 to 12 millimeters. Each 5 millimeters are numbered 0, 5, 10 millimeters. As the internal thimble is turned, the spindle is advanced or retracted. The reading shown in View A, Figure 7 is 1.44 millimeters. Scale "b" has passed the one millimeter mark on the sleeve scale "a," but is not quite to the one and a half millimeter mark on the sleeve. By adding the one millimeter reading on the sleeve to the 44 hundredths shown on the thimble, a total reading of 1.44 millimeters is obtained.

Figure 8 shows an inch depth micrometer. The following is a description of this gauge. View A shows the base. Although the base is large and not very delicate, this gauge is very useful for machine work and clock work. View B shows the lock nut to lock the spindle, the sleeve at C, the linear scale on the sleeve at D, the thimble scale at E, the thimble at F and the retaining cap for the three spindles that come with the micrometer is shown in View G. Figure 7, View B shows a drawing of the scales of this depth micrometer. The reading shown is 0.367 inch. The edge of the thimble is past 0.350 inch but not quite to 0.375 inch. The 17th mark on the thimble is lined up with the longitudinal line on the sleeve. Therefore, by adding the 0.350 inch on the sleeve to the 0.017 inch on the thimble, it would give a total measurement of 0.367 inch.

How to use the "Modern Watchmaker's Lathe" will continue next month. TMB

CHIME AND STRIKE
(Continued from page 18)

steel. A brass piece is riveted in the end to act as the pickup for the center cam(9). On many strike movements you will find that striking begins early or late, and that by bending the lift lever you can correct the problem. The New Haven lever does not lend itself to precise bending because of its construction. If you must bend it, take care not to loosen the brass piece in the end of the lever. The lifting and warning levers do not normally require a wire spring. They are heavily balanced in the downward position because of the long horizontal warning lever. The arbor which carries the drop, count and unlocking levers *should* have a spring to insure positive locking.

Assembly of the New Haven movement follows the general pattern of American striking clocks with the count wheel arrangement. The warning run, however, must be set as described earlier. This is because the warning pins do not work against a locking lever which would determine their position automatically. During assembly, try to put the strike train in the locked position. With the drop lever against the side of the slot, set the warning wheel for about a quarter turn of run. Place the count wheel so the count lever will go directly into a deep slot in the wheel. Some minor bending to correct the angle of entry for the count lever is usually necessary.

After assembly, check the operation of the strike train by applying finger pressure to turn the gears. You may have to ease the warning wheel rear pivot out of its hole to allow you to mesh the gear more accurately for the warning
(Continued on page 48)

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AWI Bench Courses 1983

	PROGRAMS	INSTRUCTORS
A	Basic Electricity & Use of Meters	Jaeger
B	AWI Certified Citizen Quartz Watch Technician	Carpenter
C (a)	Citizen LCD Multi-Alarm	Broughton
C (b)	FHF 965	Broughton
C (c)	Pulsar	Broughton
D	Seiko Quartz Analog and LCD	Smith
E	Intro. to Solid State Watch Repair	Nelson
F	Fundamentals of Solid State Watch Repair	Opp
G	Repairing the ESA 900.911 Digital/Analog	Biederman
H	Clock Restoration	Benesh
I	Introduction to Striking Clocks	Baier
J	Common Sense Quartz Watch Repair	Bishop
K	Introduction to Clock Repair	Benesh & Whitney
L	Bulova Quartz 262 and 2500	Sustachek
M	Striking Clocks–Advanced Seminar	Baier

APRIL

10	C	Des Moines, IA	Broughton
10	B	Columbia, SC	Carpenter
10	G	New Philadelphia, OH	Biederman
11-14	M	Cincinnati, OH	Baier
16-17	J	Ft. Myers, FL	Bishop
16	C	Clare, MI	Broughton
17	G	Clare, MI	Biederman
22	F	Wisconsin Rapids, WI	Opp

MAY

1	B	Virginia	Carpenter
15	C	Toronto, Canada	Broughton
20	L	Texas Watchmaker Convention	Sustachek

JUNE

6-10	K	Cincinnati, OH	Benesh & Whitney

SEPTEMBER

17-18	J	Huntsville, AL	Bishop
18	F	Columbia, MO	Opp
19-22	M	Cincinnati, OH	Baier

OCTOBER

1-2	J	Toronto, Canada	Bishop

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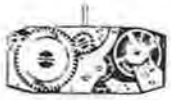
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	AS 976	5x7	17 Jwl Incabloc	45.00
	FF 59-21	3¾x10	17 Jwl Incabloc	27.00
	AS 1977-5	5½x6¾	17 Jwl Incabloc	24.00
	FHF 69N	6¾x8	17 Jwl Incabloc	18.00
	ETA 2512-1	7¾L Round	17 Jwl Incabloc	27.00

____ Marvin 160A 5L-Replaces AS 976-Comes with Dial & Hands-Specify Round-Square 40.00

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ESA 961.001—Quartz Replacement for FF 60—(Dial Feet Must Be Shortened) $16.50.

ESA 102.001—Quartz Replacement for FF 59-21—Same Dimensions and Dial Feet $30.00.

ESA 950.001—Quartz Replacement for ETA 2512—Same Dimensions. Dial Feet must be changed $38.00.

ESA301.001—Quartz Replacement for AS 1012-1677 Bulova 5AH—Same Dimensions & Dial Feet $18.00.

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____	Y 481	6¾x8 SS Analog Quartz	19.00
____	Y 561	11½L SS Shaped	17.50
____	Y 590	5½L-Replaces 432-Different Dial Hands	20.00
____	INT301-001	5½L-Use for AS 1012	19.50
____	FE 6320	6¾x8-FF60 Replacement YOUR BEST BUY!	11.95

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Battery News

By Ewell Hartman, CMW

Battery Number System

Refer to your BNS booklet to make the following monthly up-date:

Correction:

S52 (AWI): change 5.0 (diameter) to read 5.8.

Additions:

S52 (AWI): add 317 (Eveready)
S54 (AWI): add 319 (Eveready)
L10 (AWI): add ECR2016 (Eveready)
L12 (AWI): add ECR2025 (Eveready)
L14 (AWI): add ECR2032 (Eveready)

New Listing:

L22 (follows L20, AWI): 1.50 (voltage), 11.6 (diameter), 4.2 (height), 801 (Eveready)

Industry News

Eveready has published a "Watch/Calculator Battery 1983 Replacement Guide." This guide lists the AWI-BNS numbers immediately following the specifications. Thank you, Eveready, for your cooperation and helpfulness!

Service Ideas

A single-edge razor blade, of good quality, can be one of your most important tools for opening friction-type watch cases that do not have a lip on the caseback for this purpose. It is especially suitable for the new thin cases as well as solid gold dress watches. The blade's thinness aids in preventing an "opening mark" on the case. Its low cost permits disposal rather than time-consuming sharpening.

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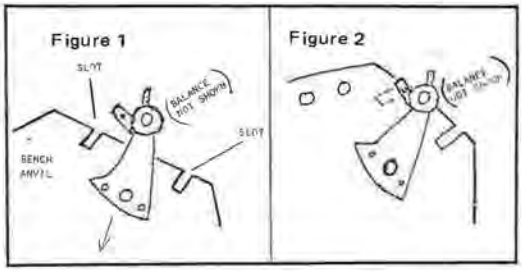


A Mislaid Tip...

This tip is from Ben Matz of Flushing, New York. Ben sent me the tip two years ago and I mislaid it—sorry about that Ben.

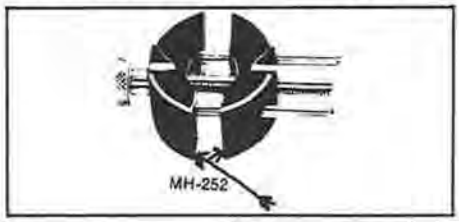
REMOVING THE SCREWLESS STUD

1. Open the regulator boot which retains the hairspring.
2. Carefully place the heel of the bridge on the bench anvil as shown in Figure 1.
3. CAUTION: To prevent damage to the dangling hairspring, observe it while performing the next operation.
4. Slide the heel of the bridge in the direction shown (Fig. 1) until the stud is positioned over a slot in the bench anvil (see Fig. 2).
5. The entire balance bridge unit is now firmly supported and the stud can now be removed with a proper punch—either by hand pressure or with slight taps of a hammer.



What watchmaker has not lost his religion trying to knock out one of these friction-fitted and/or cemented hairspring studs while trying to keep from bending the hairspring? We know it eliminates a hairspring stud screw and may save a penny in production. But should this be at the expense of the watchmaker servicing the watch?

If you feel uncomfortable using the bench anvil, you may want to try my method to do this job.



In the small movement side of a movement holder, notice that the jaws will close all the way together like a vise. Drill a hole between the two sides, close to the top edge with the slot opened 0.25mm. Use a number 61 drill and drill into the slot, parallel to the movement holder part, the small movement side of the holder sitting up.

You now have a small precision vise that will self-center the heel of the balance bridge safely and securely, parallel to the bench, leaving both hands free to knock out the hairspring stud. TMTS

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Gershman Named Executive Vice President of Seiko Corporation



Mortimer Gershman has been appointed executive vice-president of Seiko Corporation of America, the U.S. holding company for K. Hattori & Co. In making the announcement, Mr. Takayoshi Saito, President, said, "Mr. Gershman's primary responsibility will be to assist me in the development of marketing policies and plans for North American operations. In addition, he will be directly responsible for administrative and operational functions of Seiko Corporation of America, with emphasis on the achievement of performance objectives, both short and long term, as established by our parent organization."

Mr. Gershman had been executive vice-president of Seiko Time Corporation from 1978-1981, following two years as vice-president of sales for the company. He also served as chairman of the board of the American Watch Association from 1976-1980, and is currently a vice-president and board member of the organization. He is also a member of the 24 Karat Club of New York. In addition, Mr. Gershman is an active participant on the Jewelry Industry Committee of several philanthropic organizations.

JEWELERS ADVISED OF EXCISE TAX THREATS

At a meeting attended by jewelry industry leaders Michael D. Roman, Chairman, Jewelers of America (JA), and George R. Frankovich, Executive Director of Manufacturing Jewelers and Silversmiths of America (MJSA), representatives of jewelry-related associations were given an ominous account of the prospects in 1983 for an excise tax on the state and federal levels.

Roman, who also serves as treasurer of the Jewelry Coordinating Committee (JCC), the industry organization assembled last year to fight a proposed federal luxury excise tax, says: "State and federal revenue shortfalls are certain to produce attacks on the industry in the form of a proposed excise tax." His assertions are backed by a projected federal deficit of over $200 billion and a study by the National Conference of State Legislatures indicating that 22 states anticipate revenue shortfalls of more than 5% over the next two years.

The JCC plans to make available to all interested state and regional jewelry associations a "lobbying guide" for fighting a proposed luxury excise tax on jewelry. One of the vital components of this guide is the "Anatomy of Pacific Northwest Jewelers' Ongoing Battle to Defeat Proposed Luxury Taxes," generously provided to the JCC by Pacific Northwest Jewelers (PNJ), which defeated such an initiative last year in the state of Washington. This document sets forth the step-by-step lobbying approach implemented by PNJ.

Secondly, an economic analysis of last year's proposed 10% excise tax, performed by noted economist Dr. Samuel M. Rosenblatt, is also part of the lobbying guide. In addition, the lobbying papers, known as "talking points," utilized by jewelry industry representatives in last year's successful battle on Capitol Hill are also being made available to state and regional associations.

The lobbying guide is available to state and regional jewelry associations by writing to Jewelers of America, 1725 DeSales St. N.W., Suite 401, Washington, DC 20036.

HONG KONG TO HOST JEWELRY & WATCH FAIR

Hong Kong, which is widely recognized as one of the world's great jewelry design and manufacturing centers, will host the annual Hong Kong Jewelry and Watch Fair, September 13-16. On display at the famed Regent Hotel will be a selection of some of the finest jewelry, watches and related accessories and instruments.

Anyone interested in further details of the Hong Kong Jewelry & Watch Fair should contact the fair's offices at 906 Pioneer Bldg., 748A Nathan Rd., Hong Kong. Their telephone number is 3-913486, and their telex is 41249HX.

JA ANNOUNCES DATES OF THREE SUMMER SHOWS

In order to help retailers and exhibitors plan their 1983 summer calendars, Jewelers of America (JA) has announced the dates of its summer shows:

July 30-August 3 (Sat. through Wed.), The 1983 July New York International Jewelry Trade Show & Convention, New York Hilton & Sheraton Centre Hotels, New York City; August 21-23 (Sun. through Tues.), 1983 Chicago Jewelry Trade Show & Conference, Expocenter and Mart Plaza Hotel, Chicago; and August 28 & 29 (Sun. & Mon.), 1983

Sunbelt (New Orleans) Trade Show & Conference, Hyatt Regency Hotel, New Orleans.

More details on each of the upcoming shows will be available in the upcoming months.

ADEC APPOINTS NATIONAL SALES MANAGER

Mr. John Witt has been appointed National Sales Manager of ADEC Watch Inc., a subsidiary of the Citizen Watch Company, Ltd., Japan. Mr. Witt has been National Account Sales Manager of the Company since its inception in February, 1982. He is a fifteen-year veteran of the consumer electronics industry and was National Account Sales Manager for all divisions of Casio prior to joining ADEC.



Mr. John Witt

JOHNSON MATTHEY SEES BRIGHT FUTURE FOR PLATINUM

Mark Stringfellow, President of Johnson Matthey Inc., is optimistic about the future prospects for platinum. While he admits that the precious metals industry is temporarily in the doldrums, he is predicting a doubling of platinum usage in North America by 1987—less than five years away.

In the past, platinum was mostly utilized as an industrial metal; the major users being the automotive, chemical, petroleum and glass industries. Stringfellow, though, sees an increasing demand for platinum in other markets that are just now beginning to open up.

New markets that he identified include jewelry, which is growing rapidly as jewelry designers become more familiar with platinum's beauty and unusual properties.

"The future for platinum," he concluded, "looks very bright indeed . . . Johnson Matthey is confident enough to have spent nearly $40 million in constructing the most advanced precious metals refinery in the world at West Deptford, New Jersey." In addition to the refinery, the facility will manufacture chemical compounds and electronic components. It just opened in January 1983, in time for what Mark Stringfellow describes as "The coming bull market in platinum."



Mark Stringfellow, President of Johnson Matthey Inc., predicts a bright future for platinum. In fact he expects to see a doubling of platinum usage in America by 1987.

WELL-KNOWN WRITER ON GEMS RETIRES

Helen Fletcher Collins, gem editor for Watch & Clock Review, has retired after more than 20 years on the staff. Collins, who lived in Eureka, California for many years, has been a long-time member of the California Jewelers Association. She has attended, and reported on, CJA activities and Pacific Jewelry Shows for two decades, receiving the CJA "Golden Nuggets" award in 1975 for distinguished service to the California Jewelry industry.



Helen Fletcher Collins

Collins began her career in 1942 as a newspaper reporter and in 1957 joined the staff of the American Horologist & Jeweler as assistant editor and writer of gem news. In addition to her staff work on W&CR, she contributed to the Diamond News and SA Jeweler, the British Jeweller/Watch Buyer, and The Trade Post of India.

Her contributions to literature have not been limited to journalism. Published works include five collections of her poetry and as a world traveler, "Around the World on a Yugoslav Freighter," published in 1969. In 1977 she completed a book, ready for publication, biography of Orville R. Hagans titled "A Definition of Time."

Her accomplishments and honors through the years are too numerous to list in their entirety. They include: honors for outstanding contribution to the field of journalism by Newspaper Institute, New York, 1965; Bicentennial Poet of Distinction, International Poets Laureate, 1976; Poet Laureate of Humboldt County, California, 1977.

Helen Fletcher Collins, retiring at the age of 89, will reside in Colorado Springs, CO, near her children.



Ted Turner tries on a new Bulova watch given to him by Andrew Tisch (right), President of the watch company, to seal the agreement which makes Bulova the official timekeeper of Turner's Cable News Network. News segments will sign off with 10-second ID time checks showing a Bulova readout. A series of Bulova watch commercials prepared by Doyle Dane Bernbach advertising agency will be shown.

Timex Introduces Limited Edition Collection

Timex has unveiled their Limited Edition Collection—an extraordinary group of ultra-thin (3.97 mm) watches with suggested retails ranging from $100 to $120. Three styles for men and four for women, the crownless, rectangular-shaped timepieces are designed with a modern, clean look. All models feature Timex's unique bi-directional setting mechanism which makes changing the time very simple. Offering Keystone margins, they will be available in jewelry and fine department stores. C. Michael Jacobi, vice-president marketing and sales/worldwide, notes, "We believe that this new collection has by far the world's greatest timekeeping value. We're providing the very finest styling, quality and the latest technology at a price consumers can finally afford."

For more information, contact: Timex Corp., Park Rd. Extension, P.O. Box 2126, Waterbury, CT 06720; (203) 573-5000.



Part of Timex's Limited Edition Collection of ultra-thin watches

NEW JEWELRY GUIDE

All About Jewelry, a guide for buyers, wearers, lovers and investors, is now available in paperback ($6.95) and cloth ($15.95). The author is Rose Leiman Goldemberg. Order from Arbor House Publishing Co., 235 East 45th St., New York, NY 10017.

SUPERBRUSH™ CLEANER AND BURNISHER

The Eraser Company announces the availability of a new cleaning and burnishing tool called the "SUPERBRUSH."

This is a compact tool which will clean and/or polish a variety of surfaces, including but not limited to metallic materials. Applications include rust removal, burnishing metal, and many more.

Brush length is twist-tip controlled to give a cleaning action from fine emery cloth to coarse sandpaper. Twist the tip of the tool to expose a longer brush length for a fine abrasive action, retract brush to short stubby tip for a more aggressive cleaning action.

SUPERBRUSHES are individually packaged on a full color glossy card 8½" x 5" ready for rack display. The recommended retail price of the SUPERBRUSH is $2.98 and inquiries from users, distributors, stores, etc., are welcomed. Contact The Eraser Company, Inc., P.O. Box 4961/Oliva Dr., Syracuse, NY 13221; (315) 454-3237.



The Eraser Company's new burnishing tool, "SUPERBRUSH"

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Edroy Products, supplier of quality magnifiers, for medicine, dentistry and industry, has announced the availability of its new See-Better® Loupe for applications requiring magnified viewing with free use of hands. Marketed at a fraction of the cost for loupes with competitive capabilities, the innovative new device features an adjustable headband, variability of working distance, and the unprecendented flexibility of binocular-like lens barrels that adjust to any pupillary position on the lens bar.

Extremely lightweight, the entire See-Better® Loupe unit weighs less than 5 ounces. It will retail for $70.00 from Edroy Products Co., Inc. and from medical/dental, optical, and industrial distributors, coast to coast. For information, call or write: M. A. Stolze, Edroy Products Co., Inc., 245 N. Midland Ave., Nyack, NY 10960; (914) 358-6600.



New See-Better Loupe from Edroy Products

BRASS CARRIAGE CLOCK FROM BULOVA

Bulova's "Jubilee" quartz anniversary clock is a classic timekeeper with solid brass rotating pendulum, beveled glass front and side panels framed by sleek brass columns.

The model "Jubilee," #8815, has a height of 9", dia-

meter of 5-3/8", and the suggested retail price is $225.00. Contact: The Bulova Watch Co., Inc., Bulova Park, Flushing, NY 11370; (212) 335-6000.



The "Jubilee" quartz anniversary clock from Bulova

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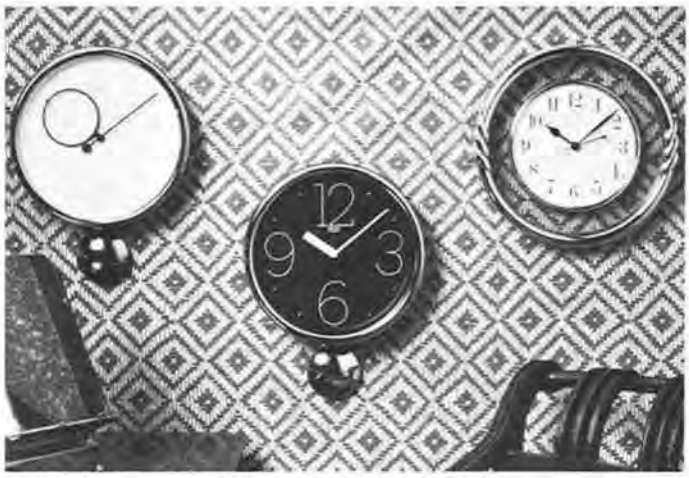
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Kassoy's new diamond tester



Brand new Seiko Ultra-Slim quartz wall clocks



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Dates To Remember

APRIL

11-14—Introduction to Striking Clocks AWI Bench Course; Baier, instructor; Cincinnati, OH

19—Oregon Watch & Clock Makers Guild Meeting; Portland, OR

MAY

20-22—AWI Bench Course, Bulova Quartz 262 and 2500; Texas Watchmaker Convention; Green Oaks Inn; Fort Worth, TX

14—Pulsar & FHF 965 (Swiss) Bench Course (AWI); Jim Broughton, instructor; Toronto, Canada

JUNE

6-10—Introduction to Clock Repair Bench Course (AWI), Whitney & Benesh, instructors; Cincinnati, OH

JULY

19—Oregon Watch & Clock Makers Guild Meeting; Portland, OR

27-30—Franklin Area Chamber of Commerce, 18th Annual Gemboree; Community Facilities Bldg., Franklin, NC

30-Aug. 3—Jewelers of America Fall International Jewelry Trade Show and Conference; Hilton and Sheraton Centre hotels, NY

AUGUST

6-8—16th Annual Heart of America Jewelry Show, Inn at Executive Park; Kansas City, Missouri. Information: Claudia Roth, 7416 Larsen St., Shawnee Mission, Kansas 66203.

15-20—JEWELTIME '83; World Trade Centre, Singapore, for Jewelry Watches and Clocks; Information: Kallman Associates, 5 Maple Ct., Ridgewood, NY 07450; (201) 652-7070.

SEPTEMBER

17-18—Common Sense Quartz Watch Repair Bench Course (AWI); Bishop, instructor; Huntsville, AL

19-22—Introduction to Striking Clocks Bench Course (AWI); Baier, instructor; Cincinnati, OH

OCTOBER

1-2—Common Sense Quartz Watch Repair Bench Course (AWI); Bishop, instructor; Toronto, Canada

14-16—Florida State Watchmakers Convention; Holiday Inn, Plantation, FL.

18—Oregon Watch & Clock Makers Guild Meeting; Portland, OR.

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CHIME AND STRIKE

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run. Always make sure there is no mainspring power on when you make the adjustment.

Hammer operation should not require much in the way of adjustment. The hammer tail (12) works in front of the cam, which has two hammer lift pins (8) driven into it, one next to each slot. The location of the hammer lift pins will assure that the hammer tail will always remain clear of the pins when the strike train is at rest. You may have to bend the hammer tail to the front or rear if it is either too close to the cam or in danger of missing the lift pins. A wire spring is required on the hammer arbor.

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Lesson 6	Using Meters to Measure Current and Resistance
Lesson 7	How Magnetism Can Generate Electricity
Lesson 8	Generating Electric Pulses at Your Bench
Lesson 9	Introduction to Diodes and Transistors
Lesson 10	Experimenting with Diodes, Transistors, and Capacitors
Lesson 11	The ESA Electronic Watch, Calibre 9158
Lesson 12	Electronic Principles of the Accutron
Lesson 13	Quartz Crystals and Electronic Reduction
Lesson 14	Bench Practice on the ESA 9180
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Lesson 16	Bench Practice on the LCD Solid State Alarm Watch
Lesson 17	Summary

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