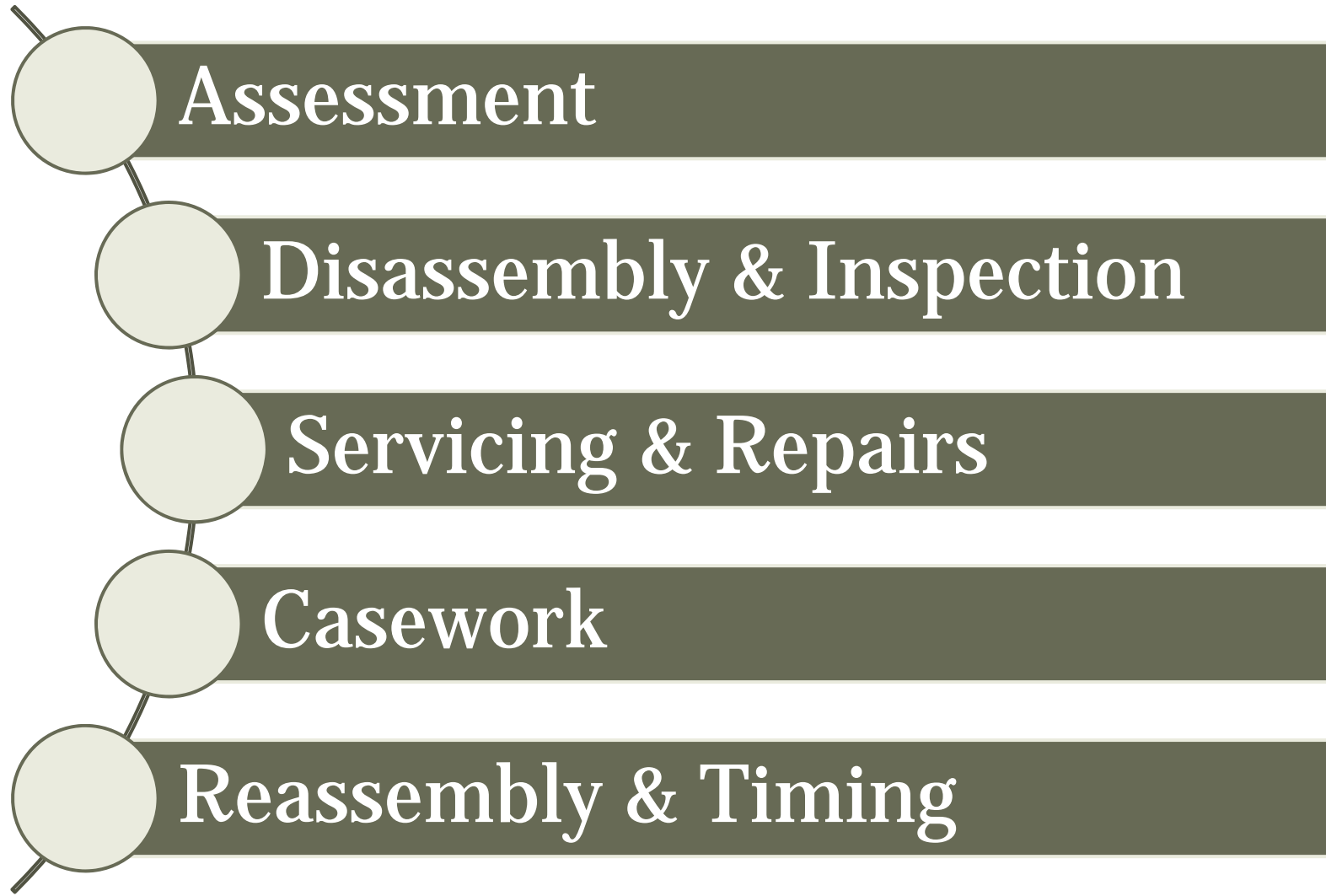


Behind the Scenes at the Watchmakers Bench

Shaun Clarke – August 2017
NAWCC San Jacinto Chapter 139

Introduction



'Magic Watch Dust'



Assessment

What Does the Client Want?

- No two repairs are exactly the same
- Quality, Cost, Schedule
- Sentimental preservation
- Originality
- Usage (daily carrier)



Assessment

Technical Details



- Grade 387
- Manufactured in 1928
- Star Watch Case Company swing out case

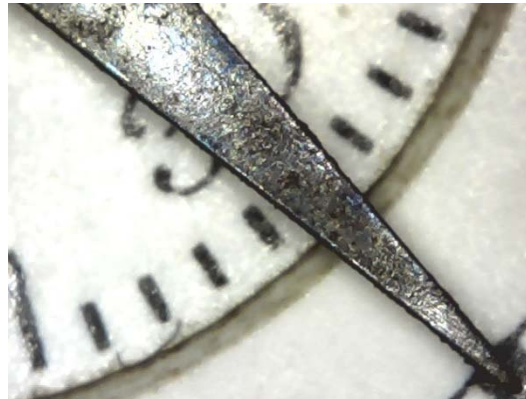
- Elgin, Serial Number #30,098,705
- 17 jewel, 16 size



Assessment

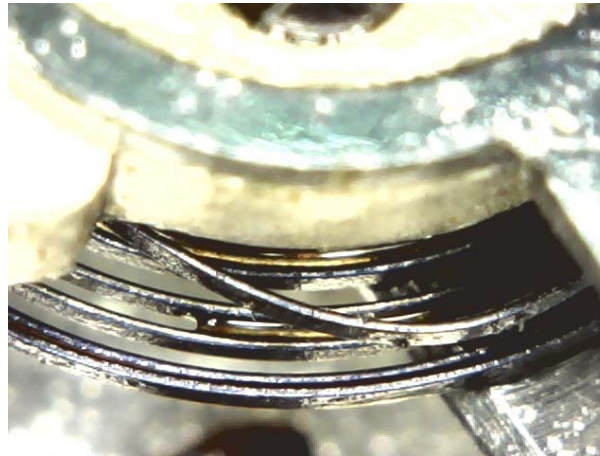
Initial Observations

- Missing crystal
- Missing second hand
- Two chips on dial
- Winding and setting problem
- Broken balance staff
- Hand worn through bluing



Assessment

Initial Observations



- No pallet action (damaged roller jewel?)
- Oily and dirty movement
- Hairspring oily and coils sticking together
- One incorrect case screw

Assessment

Initial Parts List

- Crystal (needs to be measured)
- Second hand
- Balance Staff (#861, common)
- Possibly mainspring (#817, common)
- Possibly upper balance hole jewel
- Roller jewel (needs to be measured)
- Setting components?

Disassembly & Inspection Workshop Layout



Clean Bench
Post cleaning
inspection and
reassembly

Natural Light

Dirty Bench
Disassembly, initial
inspection, lathe
work

Parts & Spare
Movements

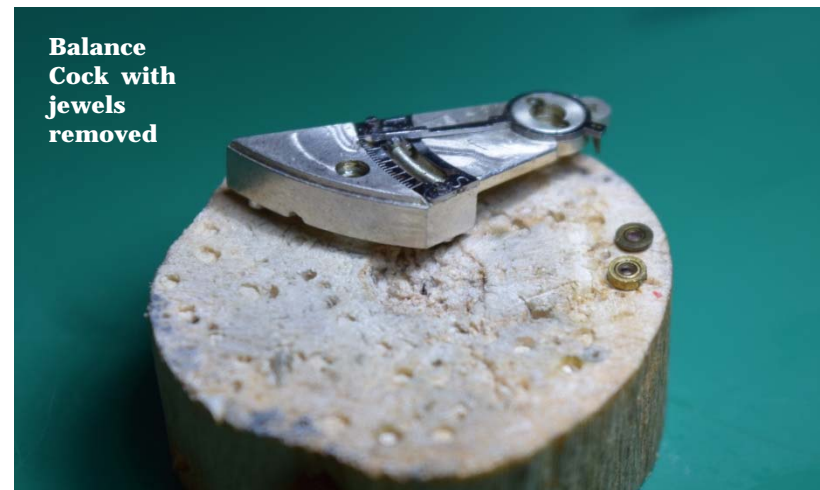
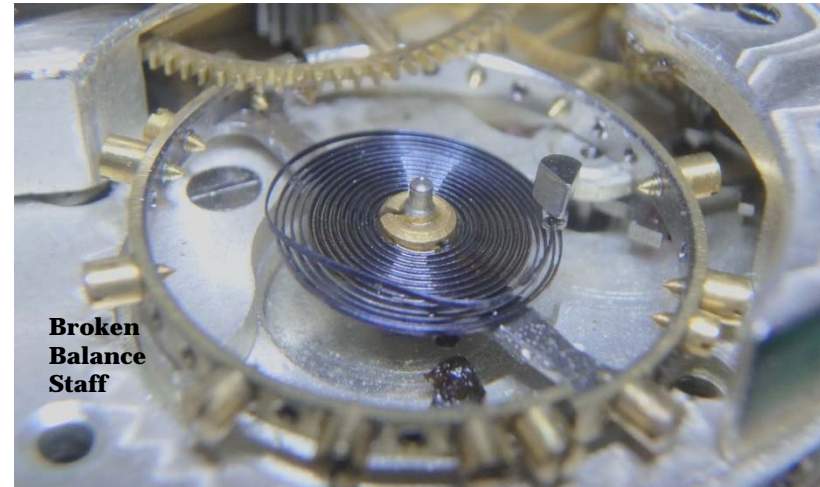
Disassembly & Inspection

Disassembly Process



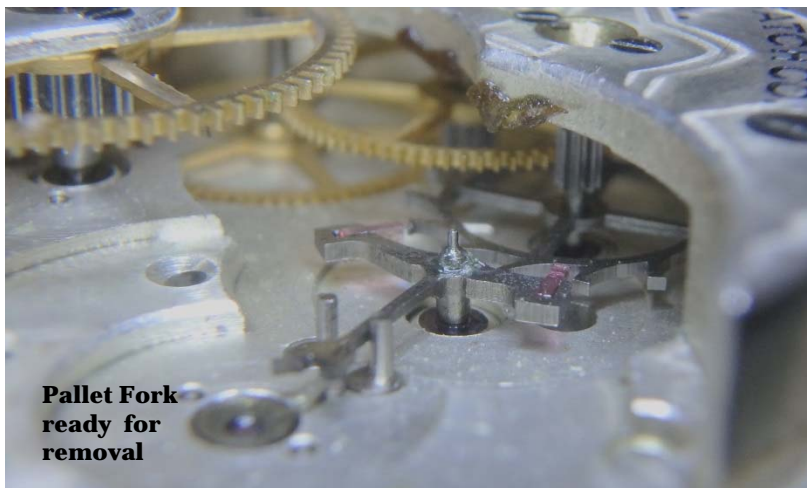
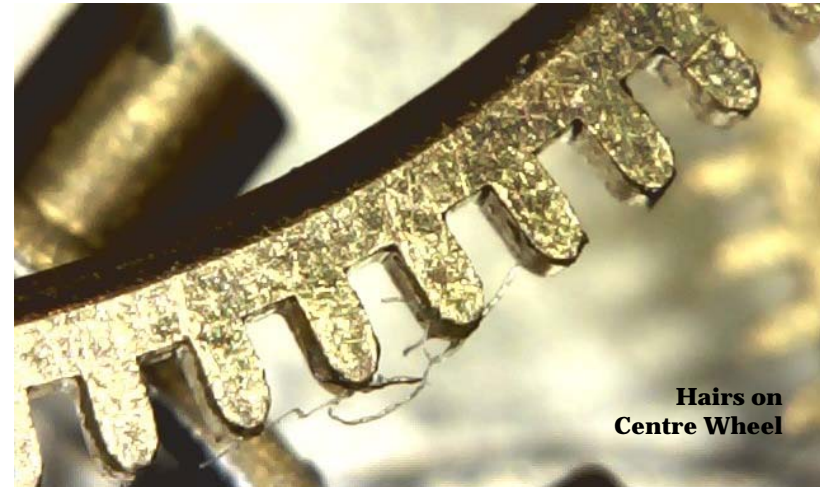
Disassembly & Inspection

Disassembly Process



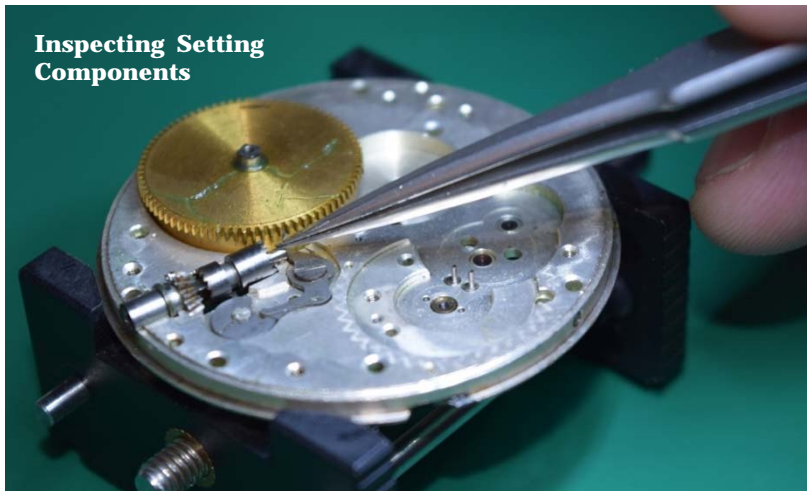
Disassembly & Inspection

Disassembly Process



Disassembly & Inspection

Disassembly Process



Disassembly & Inspection

Inspection

- Very oily and dirty, but generally in good condition (no rust)
- Upper pivot worn to nub, lower pivot slightly worn
- Upper pivot broken, jewel cracked
- Roller table jewel is missing
- Mainspring a little set, but good for reuse
- No obvious damage to winding mechanism
- Setting stem is out of alignment

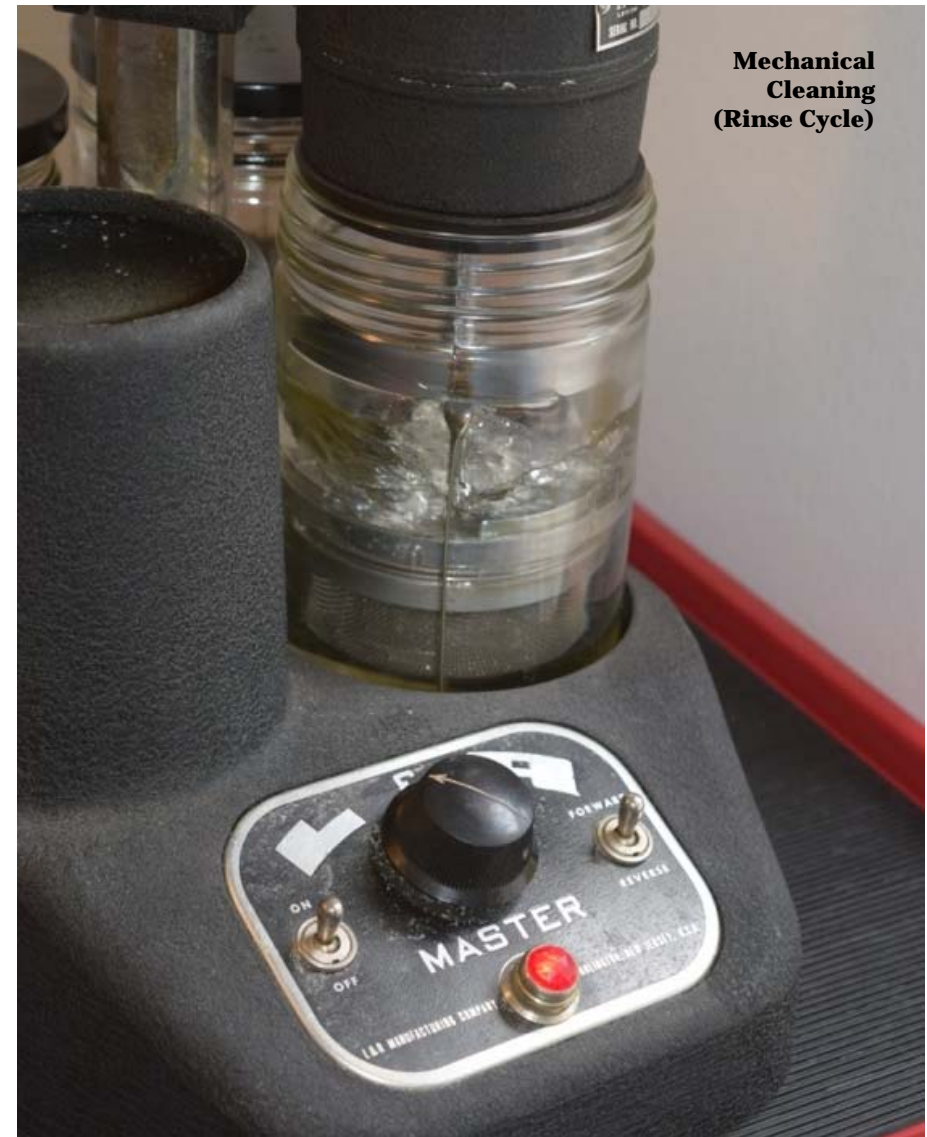
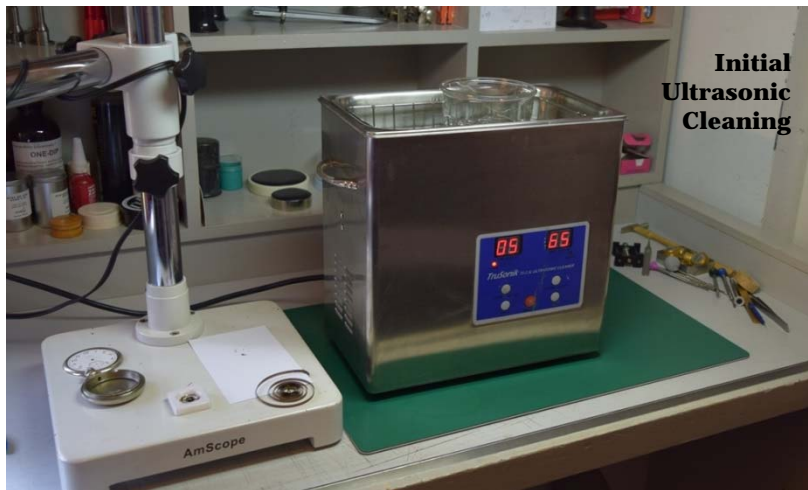
Disassembly & Inspection

Servicing & Repairs

- General Cleaning
- Replacing the balance staff and hole jewel
- Pivot polishing
- Mainspring Servicing
- Roller Jewel Replacement
- Hand Bluing
- Regulating and Timing

Servicing & Repairs

Cleaning



Servicing & Repairs

Cleaning



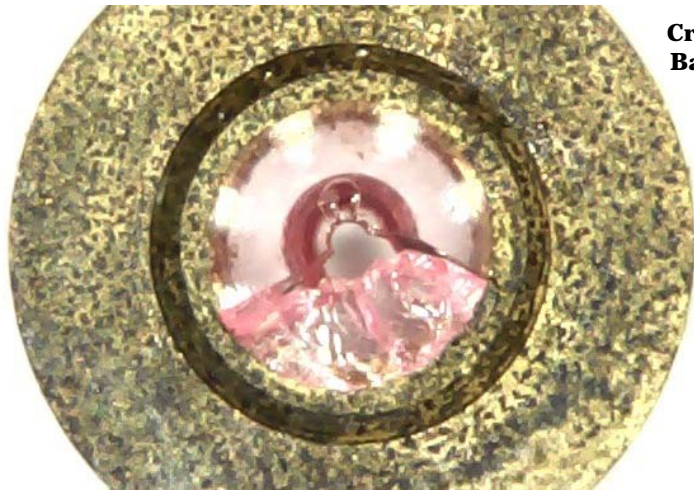
**Removing and sorting
components after cleaning**

Servicing & Repairs

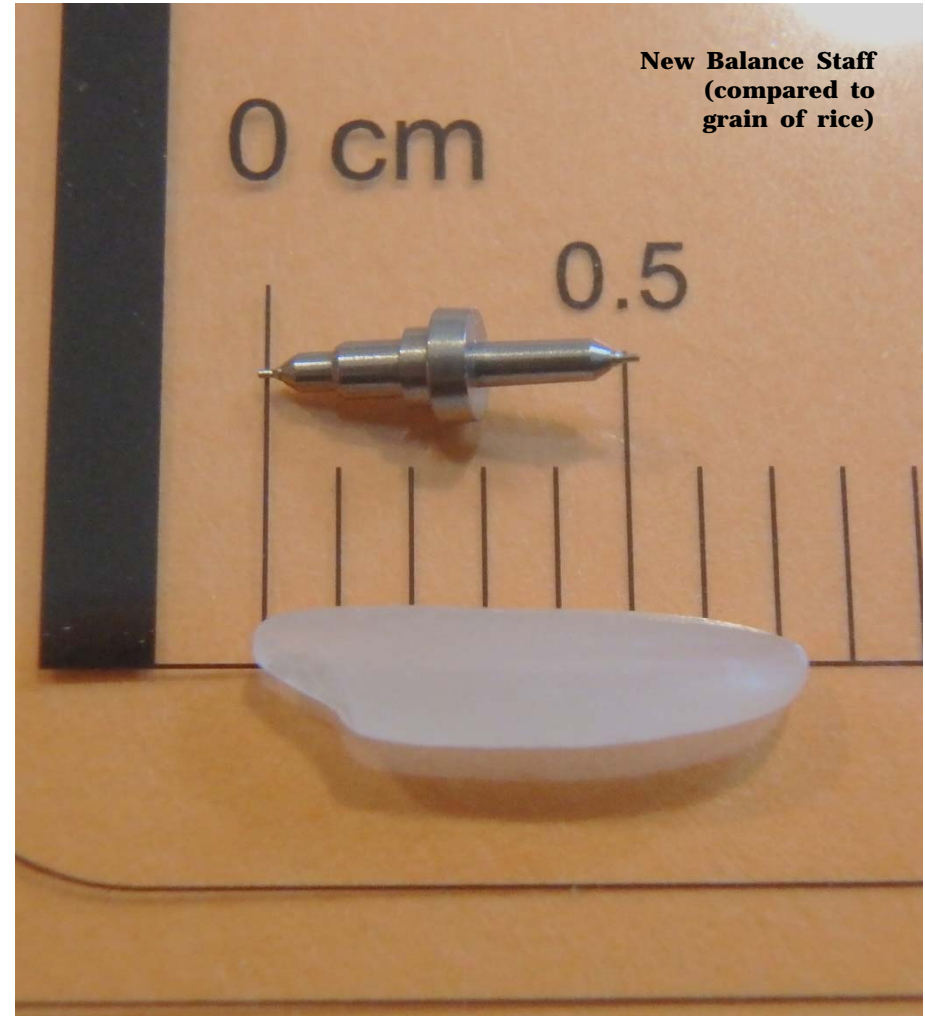
Replacing the Balance Staff



**Broken Balance
Staff pivot**



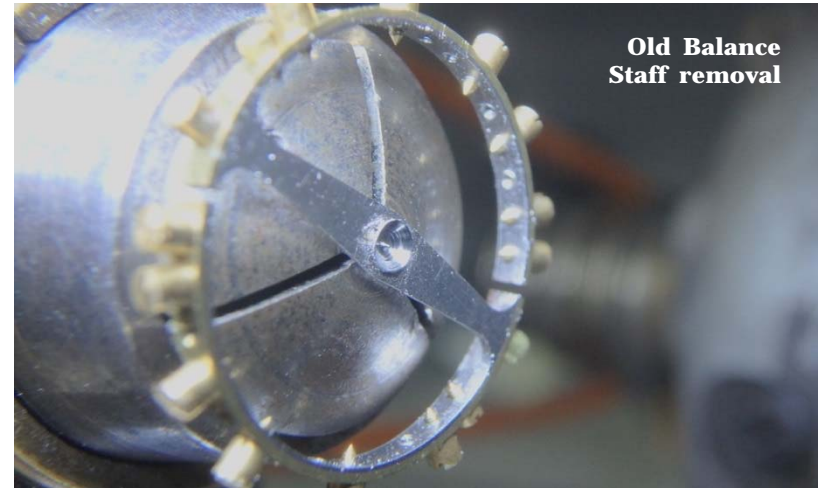
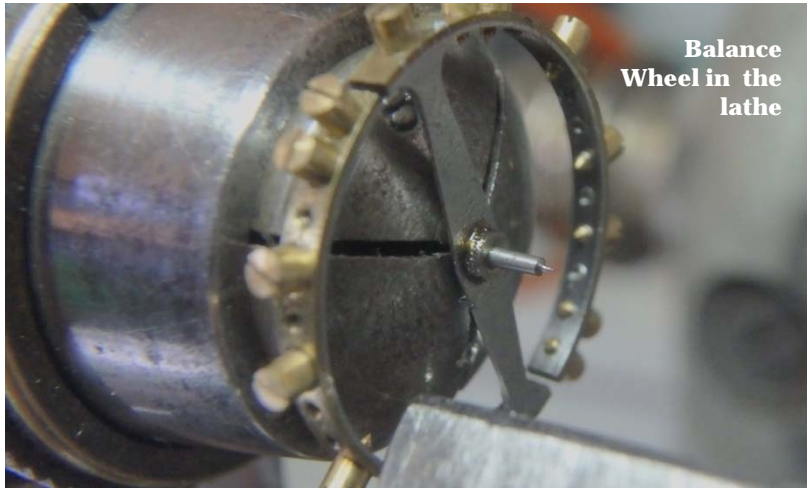
**Cracked
Balance
Jewel**



**New Balance Staff
(compared to
grain of rice)**

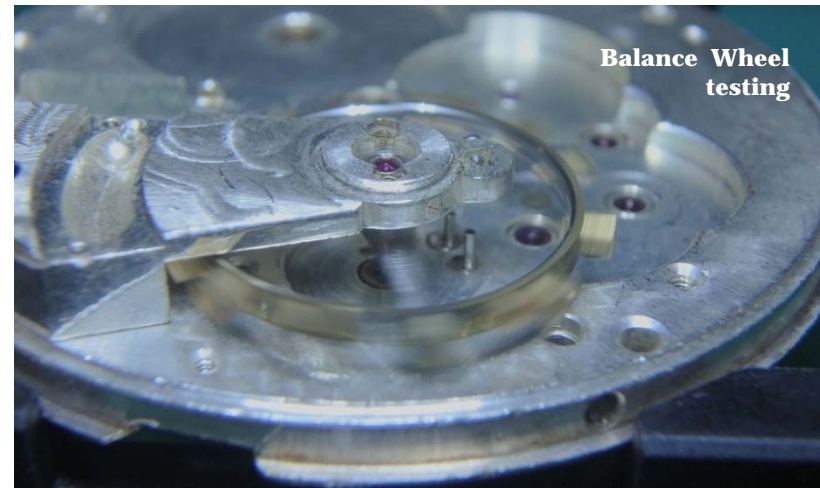
Servicing & Repairs

Replacing the Balance Staff



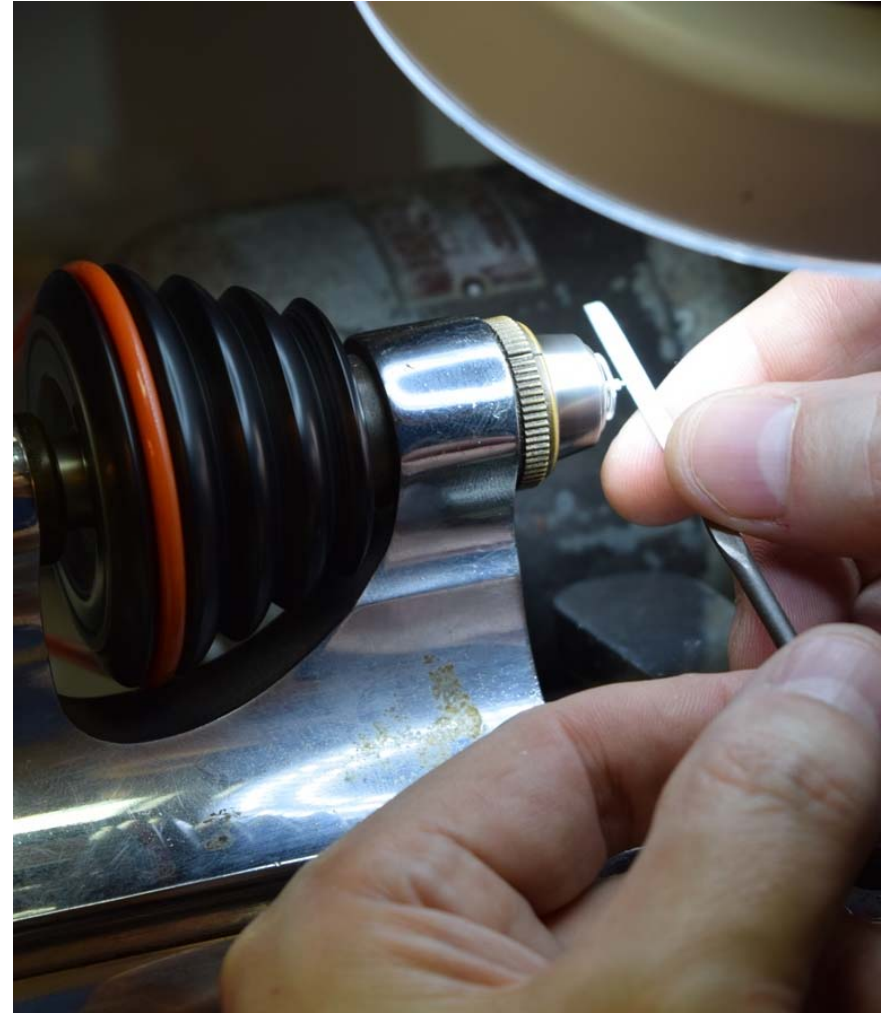
Servicing & Repairs

Replacing the Balance Staff



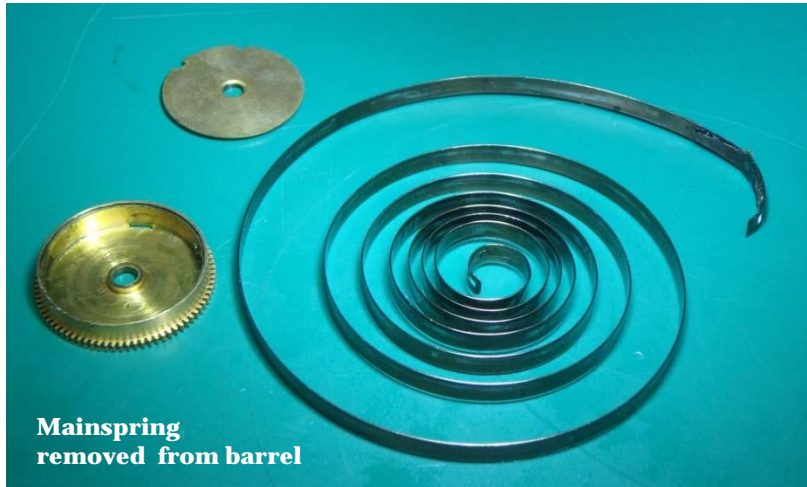
Servicing & Repairs

Pivot Polishing



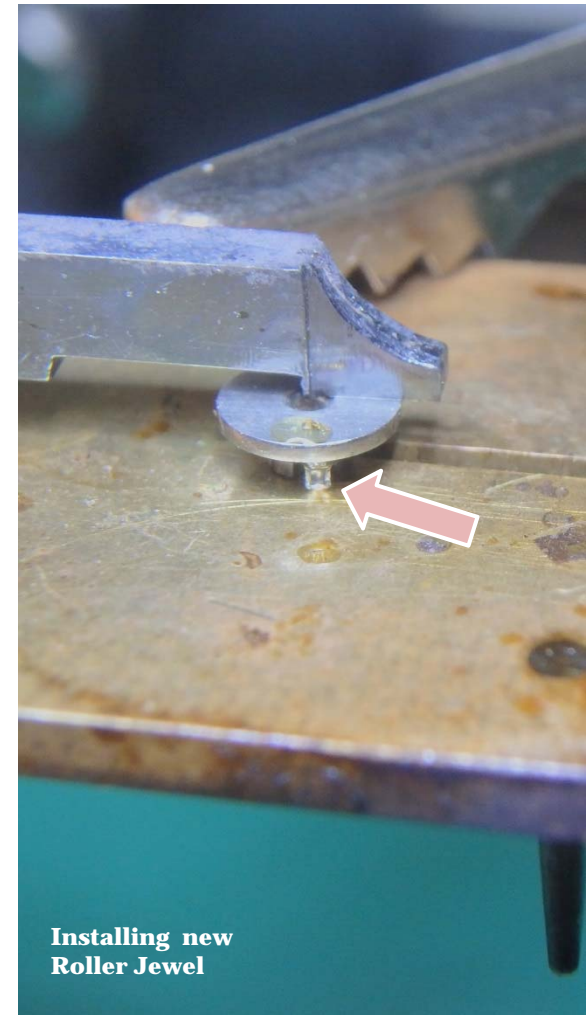
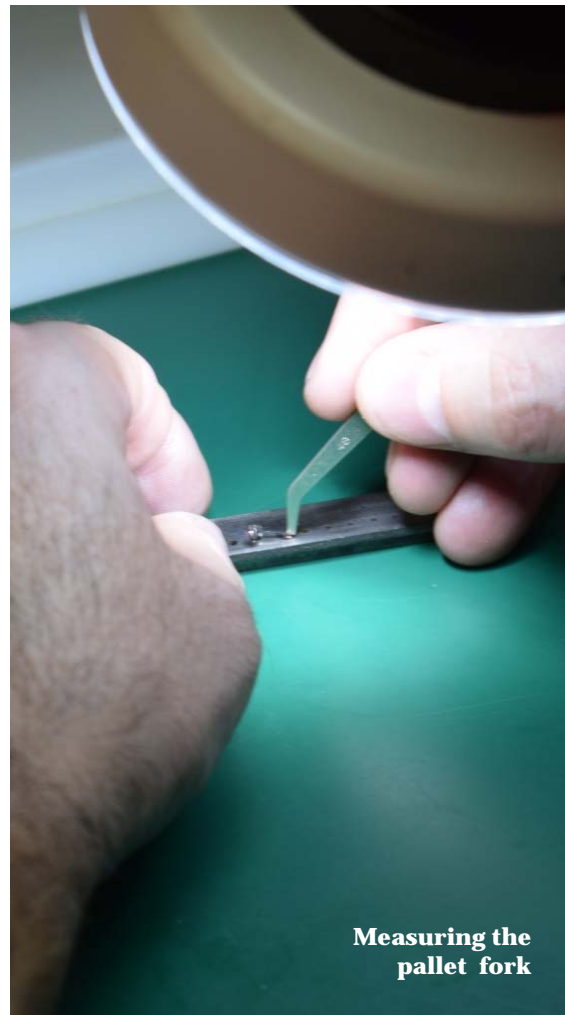
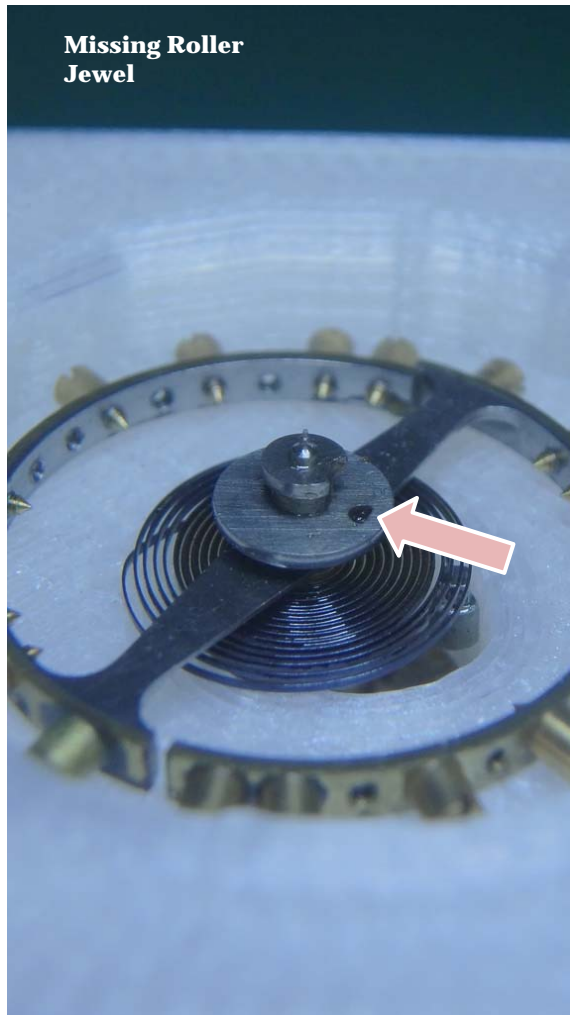
Servicing & Repairs

Mainspring Servicing



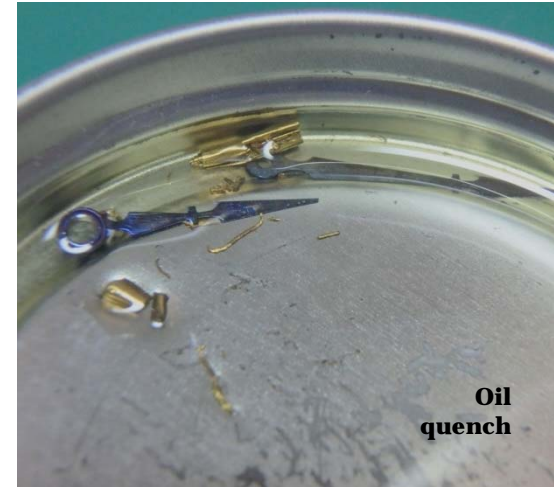
Servicing & Repairs

Roller Jewel Replacement



Servicing & Repairs

Hand Bluing



Casework

Case Polishing



Casework

Crystal Fitting



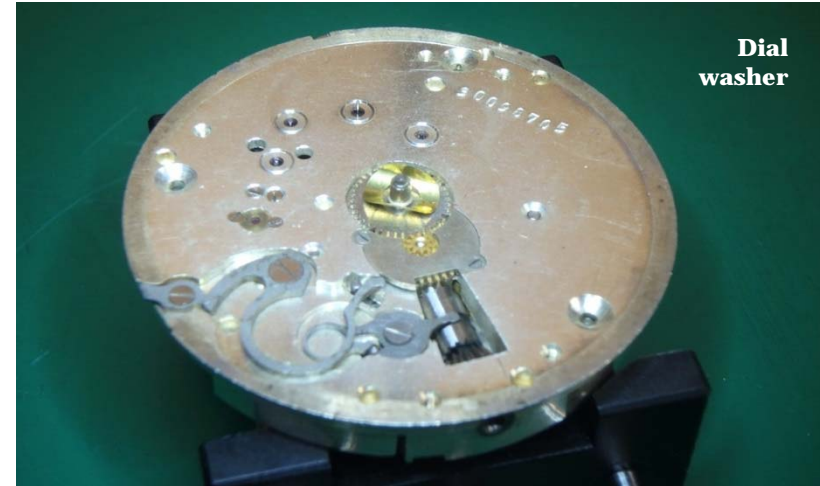
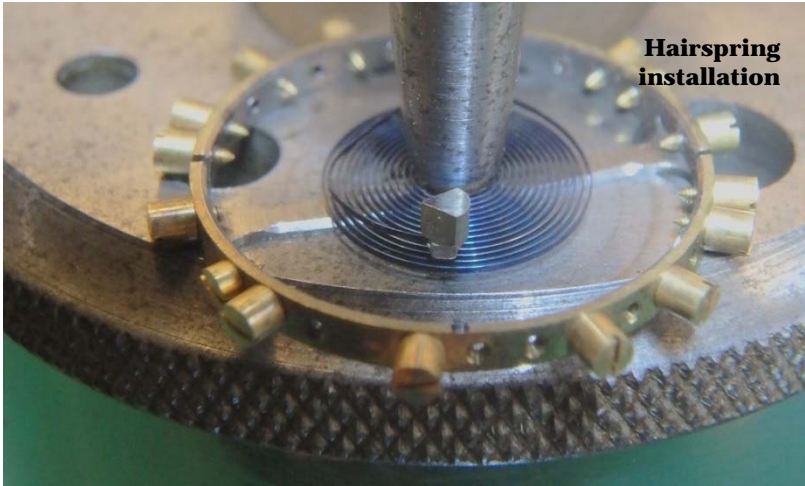
Reassembly & Timing

Reassembly



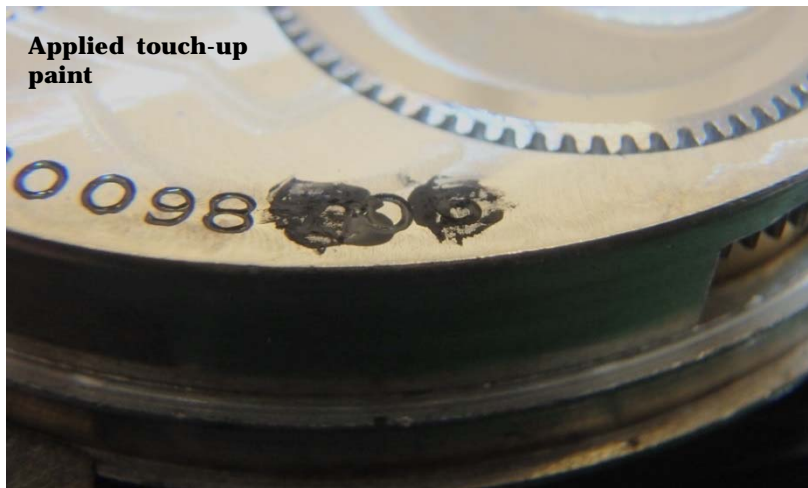
Reassembly & Timing

Reassembly



Reassembly & Timing

Touch-Up Paint

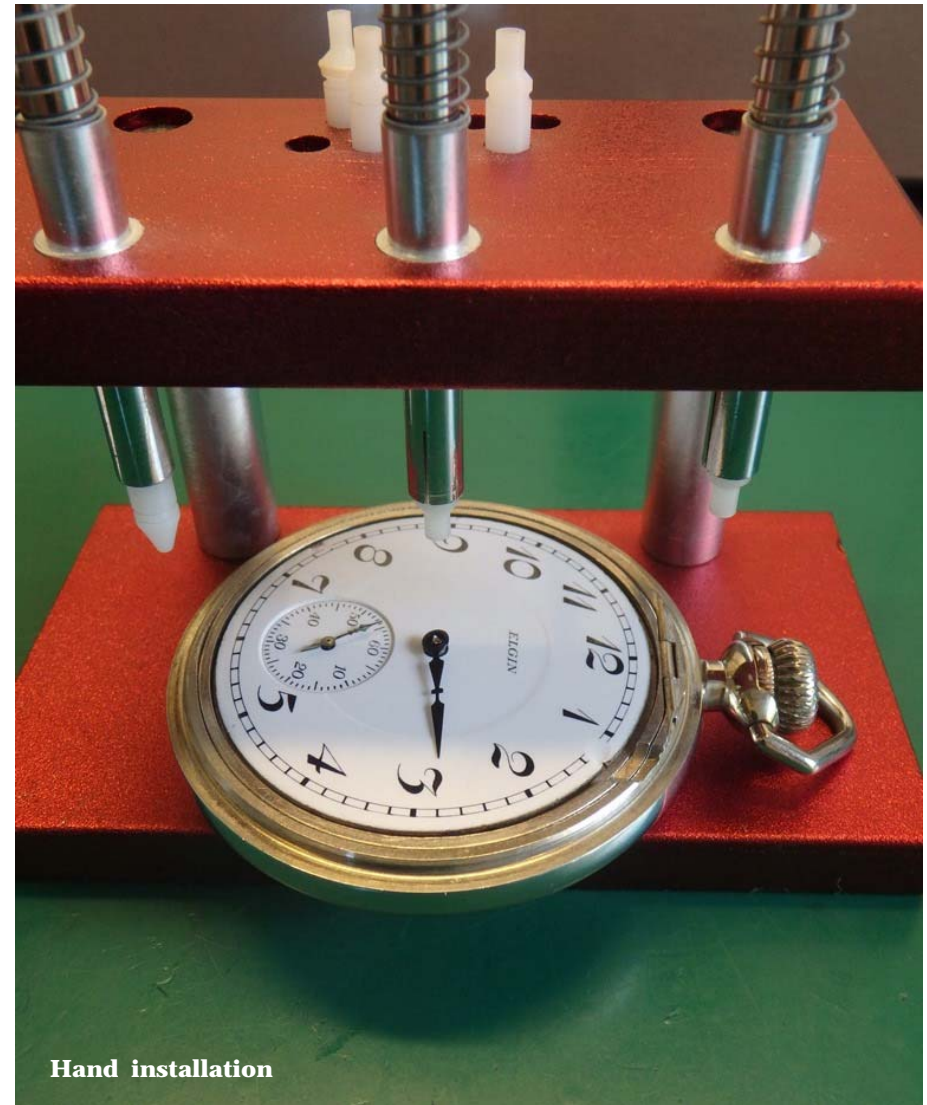


Reassembly & Timing

Regulating and Timing



Reassembly & Timing Recasing



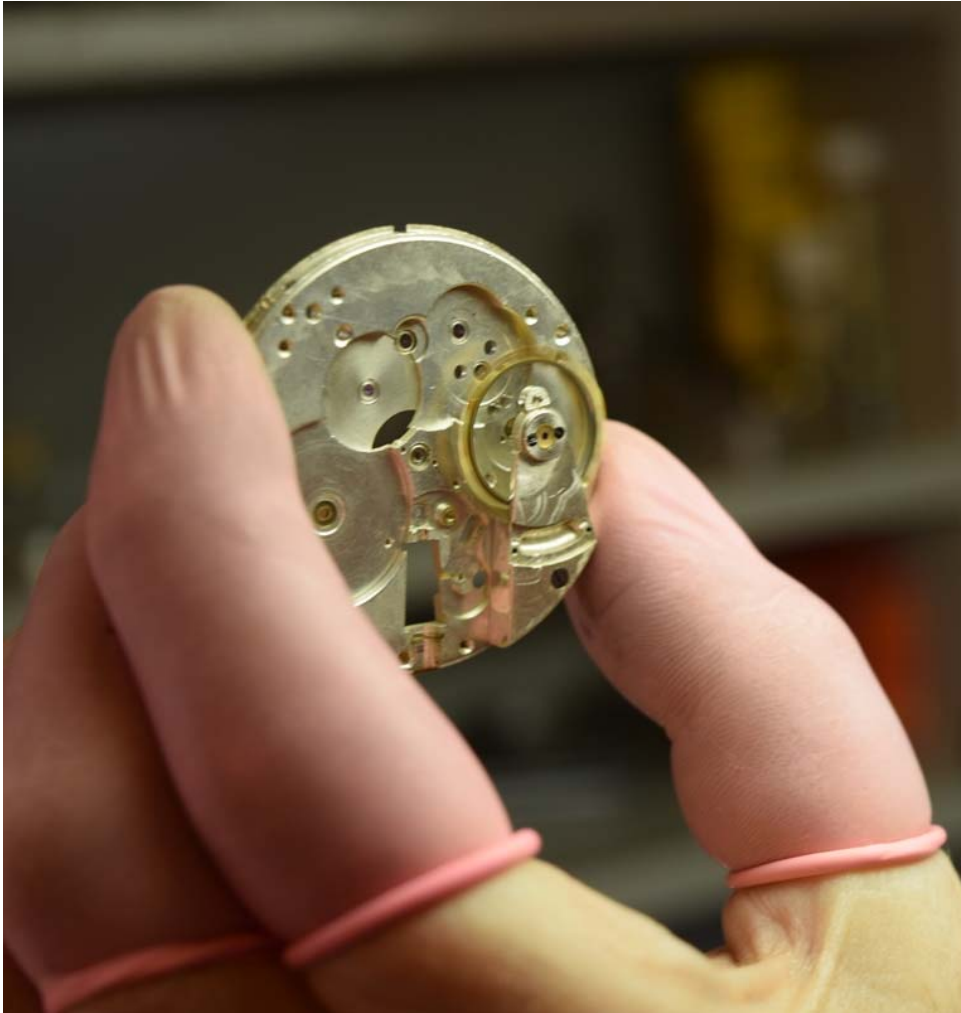
Reassembly & Timing Completed Work



Summary

- **What does the client want?**
- **No two repairs are exactly the same**
- **Many different skills /tools are needed**
- **Parts are becoming harder to find**
- **No shortcuts!**
- **Cleanliness is important**

Thanks



- **Dr. Geoff Parker** – for photography, proof reading and roller jewel replacement.
- **Darrah Artzner (FNAWCC)** – for ongoing technical advice and support.

Questions?

Chapter 139 Tech Sessions

- Starts at 8am on the 2nd Saturday of each month
- Held at Turn-Key Coatings, 8411 Rannie Road, Houston, TX 77080
- More info at:
<http://www.chapter139.com>

