

## Watchmaking

# The Use of Visualization in Watchmaking

by Joel Trenalone (CA)

*One night I dreamed I was locked in my Father's watch  
With Ptolemy and twenty-one ruby stars  
Mounted on spheres and the Primum Mobile  
Coiled and gleaming to the end of space  
And the notched spheres eating each other's rinds  
To the last tooth of time, and the case closed.*

—“My Father’s Watch” by John Ciardi

In a previous article, I walked through what could be considered a watchmaker’s typical day and mentioned dealing with a troublesome watch. Taking care of routine jobs requires organizational skills to work efficiently, and nothing can throw a wrench in productivity more than a watch with a seemingly random problem. Various problem-solving skills are called upon, including the obvious—taking the watch completely down and testing each section. When the answer is not apparent, I find great value in learning the troubleshooting methods of fellow watchmakers. Identifying and developing natural abilities, such as keen hearing, is an asset. A vivid imagination, enabling one to visualize the problem, is another valuable trait.

Early in my watchmaking career, while working on a particularly troublesome watch, I recalled the poem “My Father’s Watch,” which I had found in Dava Sobel’s *Longitude*. So I closed my eyes and I attempted to imagine myself inside the watch, following the train of power from the mainspring to the escapement. Aside from providing my eyes and brain with a much needed respite, I was able to relax and step through the watch mechanics in an effort to solve my dilemma right at the bench.

I also sometimes visualize problems just before I fall asleep or early in the morning upon awakening, as I find that my mind seems the most relaxed and creative at those times.

The issue with the watch in question was that it would stop in the stem right position. It would run for days at a time in that position, and then inexplicably stop. I “walked” my way through the watch, looking at the immense wheels and cycloidal teeth (a typical tooth shape for antique and vintage watches) rolling against each other and making a list in my mind of possible faults. I inspected all of the wheel and pinion teeth and saw no apparent wear marks. Unlike cheaper pin and lever escapements, which rely on brute force rather than high-quality components, smooth operation and less power governs the mechanics of fine watches to ensure accuracy and minimal wear. I painstakingly examined each wheel and pinion once again and . . . ah Ha . . . found that I had overlooked an ever so slight impression in one of the steel pinions. I did not have a replacement part, so I made an effort to polish the imperfection smooth (knowing that even a small amount of polishing can also change the shape of the tooth and cause further issues). After a very small amount of polishing and reexamination I reas-

sembled the watch and started running it. After a week it did not stop and was still keeping reasonable time between positions.

This visualization technique has proven very effective while working out subsequent repair issues. I was again reminded of this skill when watching the movie *Temple Grandin*, a biography based on the life of an autistic woman who considered words to be her “second language” and describes herself as thinking in pictures. She was able to perfect designs of cattle-handling apparatus using her unique ability to walk through the designs in her mind. She “became the cow” and crawled along the various containment designs to understand what kind of environment calmed livestock.

I cannot literally walk through a watch, but I have tried to develop my own overactive imagination and turn it into an asset by “thinking in pictures.” I have solved many a picky problem by “locking myself” inside the watch. There is definitely value in honing our own natural abilities (beyond the basic mechanical skills) and thus improving the technical skills needed in this profession. ☒

### About the Author

Joel Trenalone runs a small antique and vintage watch repair shop whose sole storefront is a webpage. He resides in Chico, CA, where he also works as an architect. He can be contacted via email: [jtrenalone@timepieceshoppe.com](mailto:jtrenalone@timepieceshoppe.com) and at: [www.timepieceshoppe.com](http://www.timepieceshoppe.com).