

I use antique machinery, techniques, and tools married with new and historic materials to protect and preserve cultural heritage. I work with machines made by magicians and scientists of our past to record the passing of time, bring inanimate forms to life, and pluck music from resonating steel combs. I am an antiquarian horologist: a watchmaker, clockmaker, jeweller, and turner and study automata, mechanical music, mechanical magic, and complicated clocks and watches. I regularly work with brass, steel, feathers, silver, leather, and wood.

There are several facets to the field I have devoted my life to and each requires discipline to perfect, though there is freedom in that perfection. To build precision mechanisms requires a craftsmanship that achieves tolerances in the thousandth of a millimetre. The work is its own judge. A system will not operate if it has inherent faults. To attain this level of skill means that there are no limits to what you can achieve.

Looking at the dichotomy of our shared history and modern experience, I aim to capture the vulnerable aspects of our nature. Some of the earliest attempts to understand the unknowable came during the Age of Philosophy, birthing the most complex and beautiful machines of our time, automata. They were made as mirrors for humanity and for understanding our place in the universe; they were meant to test the limits of our cognitive and creative abilities, and came as a result of improvements in cam and pinned cylinder systems. Automata that were made with these technological advancements were actually able to perform the acts previous pieces could only simulate. A mechanical human figure could play the flute instead of pretending to do so, while an automatic instrument played in the base below. I study these early systems and the motivation behind their creation, along with the lineage of craft behind related objects. In my work I aim to revive these lost narratives. My current project is a series of medieval bestiary automata based on 13<sup>th</sup> century illuminated manuscripts. These early attempts to record our natural world reveal a tradition of introspection through the creation myths associated with each and the inherent vices or virtues they represent. It is my intention that through the animation of these principal renderings, which say more about our fears and dreams than the world they were meant to reflect, our implicit sense of wonder is brought to life.

There is a long tradition in horology, generations of knowledge that have worked together to build beautiful things meant to inspire and invoke the sublime. I carry this inheritance, weaving the thread of lineage lost and gained into my work. The ornamental turners of the 17<sup>th</sup> century created some of the most opulent objects in history, three foot towers of ivory, with puzzle balls, ivory springs, and forms we are unable to replicate today. Each of the twenty-seven surviving Coburg ivories took anywhere from eighteen months to two years to turn. The information behind their creation lost, like many of the objects I encounter. Generating experimental cams and rosettes to study their forms are ways to potentially reverse engineer their creation.

Magic is an unfamiliar field in horology. Some of the world's greatest magicians were also watch and clockmakers and used horology as a way to enchant audiences, creating illusions unmatched even today. Clockmaker and magician Jean Eugène Robert-Houdin (1805-1871) created his famous mechanical Orange Tree trick, which inspired Peter Karl Fabergé, goldsmith to the Tsar to create the Bay Tree Egg (1911). Fabergé employed engine turning, a derivative form of ornamental turning in his work, setting apart his objects from other artist-jewellers of the time. Engine turning (guilloché) is a regular part of my practice and studying antique objects with engine turned ornamentation, such as boxes, watchcases, and dials provide insight to dynamic patterns and ways of replication or deviation. I employ its use in surprising places, hoping to captivate the viewer with its optical properties and explore related fields, such as scratch abrasive holography, a derivative of guilloché, and its application to my practice.

My work pays homage to the artifacts of our heritage, not just through their preservation, but also by utilizing the skills that made them to create new objects and convey a common narrative. There is a discipline in objects, especially those made to perfection with rigid tolerances. They are proof that beauty can drive someone to master many disciplines for the sake of something greater.