

# Reverse Engineering Complex Watch Movements

by Steve McGowan



Steve McGowan is an electrical engineer who designs computer IO systems for a living. For the last 5 years he has been working for a company that makes chips for noise cancelling headphones, and prior to that he worked in the Intel Research Labs for 20 years, primarily on their USB development team.

In his spare time, he has pursued a variety of interests, including watch design and 3D modeling. Initially he would create 3D models of interesting escapements that he discovered on the web to better understand how they worked. The modeling program he uses helps him to visualize how mechanisms work by allowing him to animate them, and see how their various parts interact. After discovering 3D printers Steve realized that I could use them to turn his 3D models into physical parts without a huge investment in tools or time. The additive manufacturing approach offered by today's hobbyist quality 3D printers allows him to turn a model of a very complex part into a physical part in a matter of hours, with a very small investment in tools and materials. 3D printers also allow Steve to spend more time designing, and less time fabricating his ideas. Of course, brass is beautiful and elegant, but even if he were to master the necessary machining skills, the materials costs would be prohibitive.

Here are some links to Steve's projects:

Web info

[Instagram - Ongoing saga of his projects.](#)

[YouTube - Videos of some of my projects.](#)

[Thingiverse - Repository of Steve's free designs.](#)

[Cults3D - Some overlap with Thingiverse, but also includes some designs that charge for.](#)