

# Mind-Boggling Gears

Alex Cannella, News Editor

**Square, rectangular, triangular, oval, even fish-shaped – Clayton Boyer’s Weird Gears come in every shape except for circular, and they all work.**

If you’re interested in giving them a gander, check out Boyer’s Youtube video (just search “weird gears” and it’ll be right there at the top) to see them in motion.

Obviously, fish-shaped gears aren’t entirely practical from an industrial standpoint, but the unique way they click together is a form of art in and of itself. Years of woodworking and playing around with gear sculpting has given Boyer a knack for making gears click together in seemingly physics-defying ways.

“I love things that move,” Boyer said. “Movement is fascinating. If it doesn’t move, it might as well be a rock. I’ve made table-rocks, and chair-rocks, and bowl-rocks, and picture frame-rocks, but it wasn’t until I moved into the realm of kinetics that I found the real joy hidden in the wood.”

A retired chiropractor living in Hawaii, Boyer spends his days masterfully crafting clocks and kinetic sculptures, and has been for as long as he can remember. His first recollection of the craft was a *Popular Mechanics* article he read when he was 10 detailing how to make a wooden clock.

He’s designed and built countless different clocks, as well as everything from the weird gears set to little walking wooden robots and even a “steampunk impulse engine.” The weird gears, in fact, are sort of the quirky cousin of Boyer’s full body of work. While gears certainly take center stage in a clock (and the way Boyer lays out his clocks could safely define them as art pieces), he still builds them to work, which means functionality first, mind-boggling aesthetic second. The weird gears, in comparison, flip those priorities around, and it’s no surprise that the sight of that-which-should-not-work garners a reaction.

“I have mounted these irregularly shaped gearsets and spread them around my shop for visitors to pick up and play with,” Boyer said. “The irregular gears are so unusual, and don’t look like something that should work, so when a person gives them a turn, and they actually do work, these gears never fail to create a huge smile. Even after all these years, they still delight me, as well. Out in the shop, I find they give the hands something to do during those times of meditative cogitation when trying to solve a mental puzzle.

“Gears and cogs are fascinating, and irregularly shaped gears are even more so. I have been collecting odd and irregular gears for quite some time. When I would find drawings or pictures of old machinery with odd gears, I would attempt to redraw the gears accurately, and then recreate them at the scroll saw.”


Even more interesting than Boyer’s works of art, however, is what he does with them. He doesn’t sell his clocks as complete packages. He won’t even sell them to you in pre-cut pieces to assemble. The only way you can get your very own Boyer clock is to buy the plans to one and make it yourself. Though his work could be commercialized, Boyer has always been more concerned about connecting with other “clocksters” and guiding would-be clockmakers just getting into the field.



“Since the very beginning of making my plans available, it has always been my goal to spread to other woodworkers the joy that I find in creating these wonderful mechanisms,” Boyer said. “There is so much personal satisfaction in creating. Building your own mechanism, whether it is a clock, or kinetic sculpture, orrery or calendar, gives a tremendous sense of self-satisfaction, and along with that there is also a sense of pride in having created something functional, and something that is singularly unique.”

And Boyer’s website has certainly become a hub for clocksters, with countless people showing off their own recreations of Boyer’s designs, a blog, and collaborative efforts such as the above pictured “Shark Bait,” which Boyer made with the help of Forrest Burnett. In a stroke of serendipity, one of his works, the Celestial Mechanical Calendar Orrery, won the “*Popular Mechanics* Genius Award” in 2010 from the very magazine that inspired his initial passion for the craft.

But for Boyer, it’s still all about creating.

“I always feel that my favorite piece is the sculpture I am working on at the time,” Boyer said. “There is a passion that draws us together. That new sculpture is showing or teaching me something new. It’s always been a journey of learning. Each of these mechanisms is different from the others, and has taught me something novel or unique. It could be a new building technique, or a variation on gear ratios, or even something as basic as which planet comes after Jupiter in our solar system.” 

## For More information

Clayton Boyer  
[www.lisaboyer.com/Claytonsite/Claytonsite1.htm](http://www.lisaboyer.com/Claytonsite/Claytonsite1.htm)