

## Building a better mousetrap

• Rome inventors get patents on devices developed out of necessity.

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Necessity truly was the mother of invention for several Rome inventors in the healthcare, education and industrial sectors.

Dr. John Cowan, Fred Taylor and James Franklin are among the many whose works are now protected by the U.S. Patent and Trademark Office.

Cowan, a neurosurgeon, saw a need to improve certain pieces of medical equipment. He said knowing how a lot of devices work helped him find ways to do some things differently.

"It's a lot like building the better mousetrap," Cowan said.

Taylor, founder of OTR Wheel Engineering, said the idea for his Green Carbon business was born out of a need to dispose of the massive tires used in the mining industry.

And Franklin, a teacher at Elm Street Elementary School, said watching students struggle with math led him to develop his math manipulatives device that is patent-pending.

Typically, the term of a new patent is for 20 years. The patent itself does not give someone the ability to manufacture or sell something. It does exclude others from making, using, offering for sale, selling or importing the invention.

### Draining the brain

Cowan said all of his patented devices are implants.

"Most of them have to do with spine implantation," he said. "They help fuse or stabilize vertebrate bodies in several ways. They can be in the neck, the lower back, in the thoracic spine."

One of his patents even helps drain fluids from the brain. Cowan said most of the spinal implants took four or five years to develop and the fluid device took about three years.

The key to inventing, Cowan said, is the first question — how can you make something better?

"You look for weak spots in current technology, then you start brain-storming," he said. "What's fun for me is that, with medicine, there is always something to explore."

Cowan has assigned several of his medical devices to companies that do the manufacturing. He was the first patient to receive one of his implants, one used in surgery to remove a herniated or degenerative disc in the neck.

"It's kind of remarkable. God's hand was totally in that," Cowan said. "It's actually in my neck right now and a lot people around the world use it."

He said it used to take up to five or six years for the patent office to make a ruling on a medical device. Now there's an expedited review process that, for an extra fee, guarantees a review within one calendar year.

### **Green technology**

Taylor said it took him three and a half years to develop the Green Carbon technology that reduces mining truck tires — which could be 11 feet or larger in diameter — into oil, steel and carbon black.

It took another year and a half to get the U.S. patents, and Taylor said the company also obtained patents in countries involved in major mining activity around the world.

"A customer came to us with difficulty disposing of the larger industrial-sized tires," Taylor said. "The landfill no longer wanted to take the tires."

Suncor, based in Alberta, Canada, also wanted the disposal to be environmentally friendly.

"We are able to take the tires whole and convert them back to their original major compound ... so you can reuse those products," Taylor said.

While the company is not even close to recovering the expenses associated with research and development of the technology, Taylor said they're beginning to make headway.

"We've sold six machines in Alberta and actually have a ribbon-cutting coming up on March 29," he said.

### **Manipulating math**

Franklin has sunk a lot of his own money into developing the molds for his math manipulative device, which could be loosely compared to an old-fashioned slide rule. He said the process of seeking a patent has also been expensive.

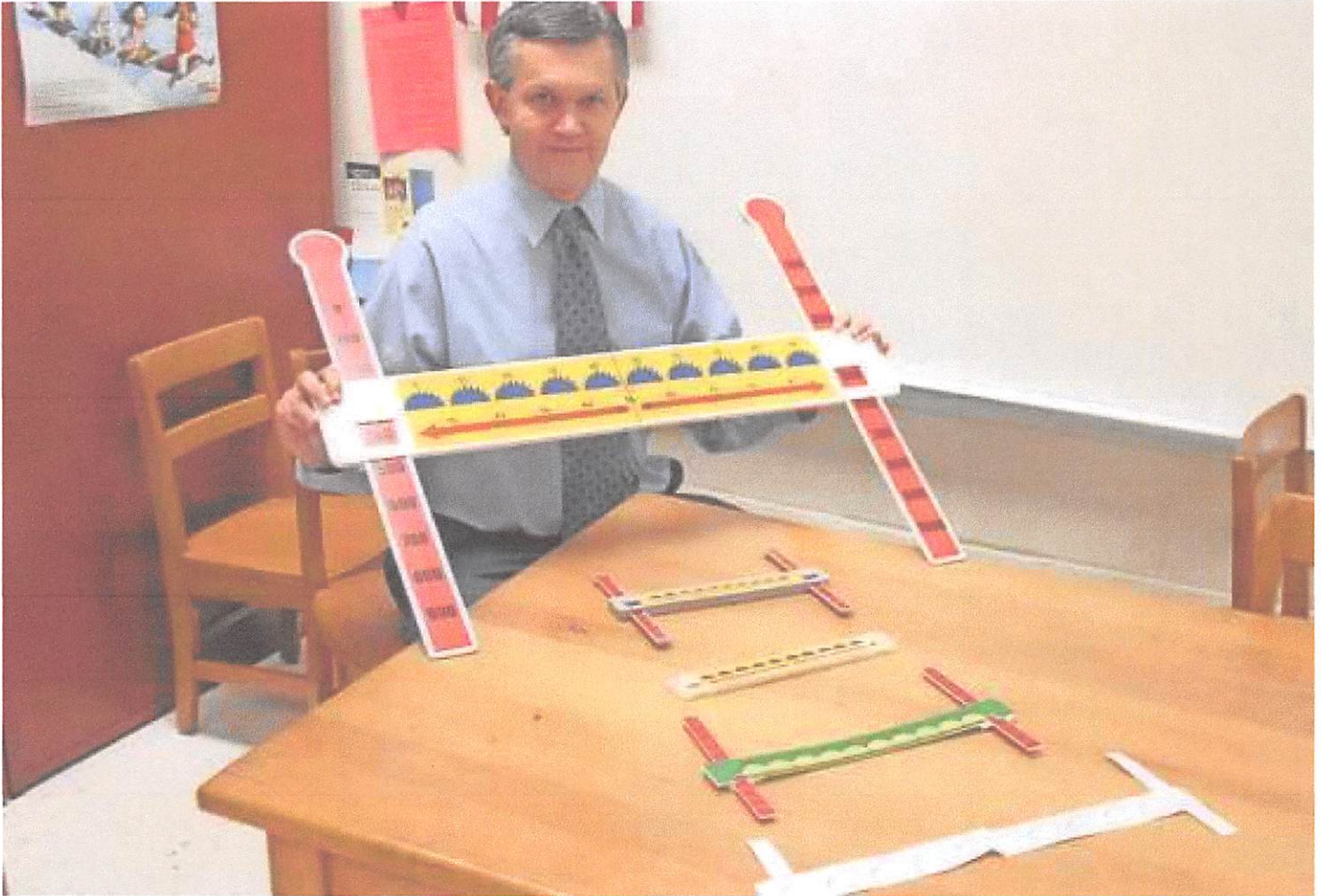
He started the process in April 2013, using an online legal service, and the review still hasn't been finalized.

The manipulative is designed to be used in a variety of ways. It can help teach children how to round up numbers all the way to 10 million. Another version deals with learning fractions, and Franklin has even developed a Braille device for the visually impaired.

"Everything I've come up with was born out of the needs I've seen with my own students," he said.

Franklin spends most of his free time marketing the device. In the afternoons he works the phones with clients out west because of the time difference. During fall, winter and spring breaks, he's often making presentations at education conferences.

"I keep on doing this because I know it works," Franklin said. "I've seen it with my own students. It's being used in 30 different countries and Canada."



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Elm Street teacher James W. Franklin shows off the progression from a paper device to a plastic-molded device which helps students understand math problems.



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Dr. John Cowan shows off a device that is implanted in the spinal system.