

# If He Builds It, Will They Come?

*Gear Technology's* bimonthly aberration — gear trivia, humor, weirdness and oddments for the edification and amusement of our readers. Contributions are welcome.

**R**ichard Spens has been rebuilding antique machine tools for nearly a decade. He is drawn to the ornate architecture and fascinated by the open design that allows you to see inside a machine as it operates. "Working with machines has been a lifelong thing with me," said Spens, now a design engineer. "I started building steam engines when I was 10 years old." What he's working on now, however, is bigger than any steam engine or machine tool. In rural Livonia, Michigan, Spens is converting an old dairy barn into an accurate recreation of a turn-of-the-century, belt-driven gear shop. It's an outgrowth of his interest in antique machine tools and, he feels, a way to stem the tide that is costing America so many manufacturing and skilled trade jobs.

"I see America losing its industrial base and hands-on skill," said Spens. "I think it's important to keep up the interest in the young people." He is hoping that his antique gear shop will be able to do just that by introducing children to machine tools that they can see into, watch in operation, and even operate themselves. Ideally, they could create something that they could take away as a souvenir. It was an idea Spens got while visiting the Henry Ford Museum's machine shop exhibit. "People were lined up to take a turn making a little candlestick at a turret-lathe they had set up. A machinist—an old timer—would take them through the procedure, and they came away with the candlestick they made themselves. I thought it was great."

According to Spens, one of the real jewels of his collection, and the most operational gear machine he has, is a Chase and Sloane machine built in the 1880s. A tabletop machine with its own motor, it was used to cut the tiny gears that went into the foot-powered dental drills of the day. According to Spens, "It was one



*The Massey Harris Gear Plant, Racine, WI, 1945.*

of the most accurate gear cutters of its time. To make the drill as quiet as possible, it had to be."

Some of the other gear machines that will one day adorn his shop include another Chase and Sloane, this one with a three-spindle head that gashes, rough-cuts and finishes the tooth before the manual index moves the blank to its next position. There are also a pair of Adams gear hobbbers (circa 1910) with fully open architecture and several smaller gear cutters used for watch making. Spens is also restoring an interesting pair of Gould and Eberhardt vertical hobbbers, dated 1909 and 1912 respectively. These machines demonstrate the changes in machine architecture that G&E implemented during that time.

The project itself has been a long and difficult one right from the start, with humidity problems encouraging rust as well as problems with powering the shop. Spens' long-term goal is to erect a hit-or-miss single piston gas engine to operate the belt. This, in turn, would

power the belts going to the machines. However, those machines that already have motors, such as the gear machines, will not be converted in order to keep them operational. Other machines will be belt-driven to give visitors a taste of what a belt-driven factory was like.

So, will the shop be open to the public? Yes, answered Spens. "It'll start out as a kind of private exhibit people can visit on a one-on-one basis. My ultimate goal, however, is to make it a museum to educate teens and young adults and interest them in careers in industry."

If you can help, Spens wants to hear from you. If you have an antique machine for sale or donation, or if you are interested in acquiring antique machine tools, write to him at:

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