

In 1949, Turner began manufacture of an all-purpose diesel-engine tractor, the Yeoman of England which achieved worldwide sales, and led the company to set up manufacturing facilities in many countries around the world. In 1972, Dana took a 30 percent stake in the company. The partnership proved such a success that in 1978 Dana bought the company outright.

3rd vignette

The Founding Fathers

While Leland, Olds and Ford were transforming the way automobiles were made, and Clarence Spicer was redefining power transmission, many future members of the Dana family were also making dramatic contributions to the automotive industry.

It was an era of extraordinary inventiveness. In 1882, when A.P. Warner (founder of Warner Electric and one of the Dana family's most prolific patent-holders) was just 12-years old, he told his grandfather he'd like to be an inventor. "Arthur, you are too late," his grandfather replied. "Everything to be invented is invented, and there is no use your wasting time in trying to make something new."

Rarely can an observation have been so wrong. There was a frenzy of invention at the turn of the twentieth century as new power sources, improved communications technology, better processes and machining all added to the heady mix of progress. Inspired by Thomas Edison, "the Wizard of Menlo Park," inventors had become celebrities.

The automobile, at first no more than an engine and chair on wheels, offered great potential to these ingenious minds. Tremendous competition amongst rival inventors meant that everything was up for improvement. The internal combustion engine had not even become the dominant power source. The first recognized land speed record, set in 1898 by an electric car (at 39.24 mph), was beaten over the next eight years by electric, steam and gas engines. And the earliest cars offered little of today's standard equipment -- no headlights, ignition, windshield, instrument or even a roof. All these had to be thought of, designed, patented, manufactured and sold.

No one exemplified that spirit of inventiveness better than A.T. Brown, arguably the most prolific and versatile inventor in the Dana family. While working with L.C. Smith, a gun company, Brown designed a safety catch for guns, a breech loading gun, an electric firearm and the double-lock bolt for the Smith Gun. Later, working for the Smith Premier Typewriter Company, he perfected double-keyboard typewriter. In 1892 he invented a pneumatic bicycle tire, and later sold the patents to the English Dunlop brothers.

As well as being a hugely successful inventor, Brown was president of several companies. In 1895, with close friend Charles E. Lipe, (inventor of a milling machine and the first man to perfect an invention for sewing brooms), Brown conceived an idea for a two-speed gear for bicycles. The gear proved too expensive for commercial success, but the Brown-Lipe partnership continued. In 1904 Brown-Lipe sold a progressive type motor car transmission to the H. H. Franklin Company Syracuse. Two years later E.R. Thomas Company bought Brown-Lipe's first selective type auto transmission, while the first Brown-Lipe clutch was shipped to the Grabowsky Power Wagon Company in 1911.

Paying the highest-ever per-share price for a Syracuse business, Spicer acquired Brown-Lipe in 1929, and moved the business to Toledo in 1931.

Victor

John H. Victor, co-founder of Victor Manufacturing and Gasket Company, applied for many patents in his inventive career, including one for an improved golf club and another for a filing cabinet. But it was in establishing the gasket company with his brother Joseph in 1909 that he found his greatest success. Victor's copper-asbestos gaskets provided longer life and better sealing than their competitors, and soon the company became the leading supplier of gaskets to the automotive industry.