



From the Garage -

by Paul Hunter



The Spark Plug



I was always intrigued by the origin of the spark plug. The gasoline engine development depended on it (until German inventor Rudolf Diesel came with his bright idea in 1893). As a youngster I understood how the engine worked - I started at 14 years old taking them apart - and not to take anything away from those savant engineers and scientists who invented the principle of operation and produced unbelievable results, but all of it depended on someone who could develop a product that could make a spark to create that ball of fire (kernel) to expand the gas vapour virtually instantly under very demanding parameters of high pressures and heat. Along came a Frenchman in 1860 by the name of Etienne Lenoir who used an electric spark plug in his gas engine, the first practical internal combustion piston engine patented that year, and is generally credited with the invention of the spark plug. He obtained a patent (patent no 345596) in 1886 the same year he obtained a patent for a carburetor.

Some historians have reported that Edmond Berger invented an early spark plug on February 2, 1839. However, he did not patent his invention and in 1839 these engines were in the early days of experimentation. Therefore, Edmund Berger's spark plug if it did exist would have had to have been very experimental in nature as well or perhaps the date was a mistake.

France dominated the spark plug market in the early 1900s, supplying gasoline engine manufacturers with only a limited line of plug configurations. They were also known to be quite costly and had substandard quality. Albert Champion was born in France in 1878. In 1889, a renowned bicycle and motorcycle racer, Champion came to America to compete in a series of races. He had brought several bicycles and motorcycles, but found parts very hard to find in the United States. As a result, Champion made his own parts. To help pay bills and cover expenses, Champion began making spark plugs and sold them to friends.



Champion's love of motors slowly turned towards automobiles and he later returned to France to open a shop that manufactured spark plugs and magnetos.

In 1900, Champion returned to America after being hired by Charles Metz to race bicycles and motorcycles for the Waltham Manufacturing Company. In 1904, Champion moved to Flint, Michigan, where he founded Champion Ignition Company for the manufacturing of spark plugs. With the help of investors, Champion was able to turn his racing hobby into a successful business. Unfortunately, problems with the investors soon lead to a break up. Champion soon found himself without a company. The investors continued to manufacture the spark plugs under the Champion name, but Champion himself was out of a job.

In 1908 with the backing of the Buick Motor Co., Champion began a new company called the AC Spark Plug Company. Albert Champion was appointed president. In 1916 Alfred P. Sloan formed United Motors Corp. and eventually acquired Buick and AC Spark Plug. There were many more plug patents filed around the turn of the century as recorded in Wikipedia. Early patents for spark plugs included those by Nikola Tesla for an ignition timing system, 1898, Frederick Richard Simms, 1898 and Robert Bosch also in 1898. But only the invention of the first commercially viable high-voltage spark plug as part of a magneto-based ignition system by Robert Bosch's engineer Gottlob Honold in 1902 made possible the development of the spark-ignition engine. Subsequent manufacturing improvements can also be credited to Albert Champion as well as a host of others including a woman by the name of Helen Bartlett in the development of the plug insulator.

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Next month - **What spark plug is in your Model A Ford? How are your Plugs Burning?**