

TIME TRAVEL

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Francis Blake: An Unsung Hero?

The Time Travel feature highlights the early pioneers that have helped shape the trajectory of the electronics industry. Since we started this feature, we have profiled Max Planck, Nikola Tesla, Guglielmo Marconi, James Clerk Maxwell, Hedy Lamarr and Oliver Heaviside, all recognizable names. As I started thinking about the November profile, I saw that Francis Blake was granted a U.S. patent in November 1881 for the "Speaking Telephone" and thought "who?"

It turns out that Francis Blake was born in Newton, Mass., in 1850, less than 10 miles up the road from the Microwave Journal offices. He began working as a scientist with the U.S. Coast Survey at 15. In 1874, Blake married into a very wealthy family, allowing him to leave his job and pursue his passions as an inventor and later, a photographer.

This is where the story gets interesting for the electronics community. Alexander Graham Bell received a U.S. patent for the telephone in 1876, but by most accounts, the business he started was struggling. Bell's telephone received calls, but it did not transmit them very well or very loudly. At the time, Western Union was Bell's main competitor and they were using a carbon-based transmitter from Thomas Edison that performed much better.

When Blake learned of the telephone patent, he began experimenting to improve the quality of the transmitter. For the next two years, he worked with Bell employees to refine the design to correct a whole host of resonance, mounting, contact point and material issues. In 1878, satisfied that he had a viable improvement, Blake took his transmitter to the Bell offices and after thorough testing by Thomas Watson, the person who received Bell's first phone call, the Bell Company bought Blake's design. Feel-

ing confident that they had a transmitter that was as good as or better than what Edison had developed for Western Union, the Bell Company sued Western Union for patent infringement and won. Western Union settled out of court and surrendered all its patents and telephone business to the smaller Bell Company. From these beginnings and armed with the

patent and the "Blake Transmitter," as it became known, the Bell Company grew into Bell Telephone, a behemoth that had revenues of more than \$400 billion with more than one million employees before it was broken up in the early 1980s.

The proceeds from the sales and licensing of the Blake Transmitter made Francis Blake independently wealthy. In 1884 he took up photography and it quickly became a passion. In 1885, Blake purchased an instantaneous shutter camera, which meant a shutter speed of about 1/300th of a second. Not satisfied, Blake designed a focal plane shutter that allowed shutter speeds of 1/1000th - 1/2000th of a second. This allowed stop-action photographs of moving objects that were quite different from what was common at the time.

Francis Blake was a bit of a Renaissance person with his interests and inventions. He rubbed shoulders with the people credited with developing the U.S. phone industry, but he did not have that notoriety. His Blake Transmitter was widely used for 20 years after it was patented and it was credited with speeding up the development and deployment of telephony in the U.S. So, the answer to my question of "who?" is a man who may be the unsung hero of an industry that is currently approaching \$2 trillion in revenues.

