THOMAS ALVA EDISON

WIZARD OF MENLO PARK

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Cell phones, high definition TV, hybrid cars, iPods, laptops, and Wi-Fi, are becoming commonplace. If asked to name the inventor of any of these technological wonders, we simply shrug our shoulders and plead ignorance. Thomas Alva Edison, the man who gave us light and helped usher in the age of technology, would be forgiven for scoffing at our shortcomings. Today, Edison is as highly regarded as the inventor of the “method of invention,” as he is for being “the most prodigious inventor of his era, indeed of all time,” as *Time* Magazine reported in 1999. Edison introduced the concept of the modern research facility and received 1,093 patents during his lifetime; no one else even comes close! Not all of his inventions were new discoveries; some were merely improvements in existing technology. Lamps and bulbs, for example, had been around for years, but his refinement, the incandescent bulb, made light practical, and brought it into shops, factories, and homes. And some of the patents should have been attributed to others who worked with Edison.

Born February 11, 1847, in Milan, Ohio, Edison was the last of seven children. Years younger than his siblings, he was raised as an only child. He was awkward, had an enlarged head, and did not speak until he was four. His father thought he was feeble. When Edison was five, he saw a neighborhood boy get swept away by a raging river but unaccountably remained mute while the town searched the woods for the missing boy.

When Edison was eight, a teacher called him “addled.” Fortunately, his mother, a staunch Presbyterian teacher, yanked him out of school after only three months of formal education, and home schooled him. She could handle history and literature, but Edison’s
interest gravitated toward science. Unable to answer his questions, his mother gave him Parker’s *A School Compendium of Natural and Experimental Philosophy*, with illustrations of experiments in electricity and chemistry. The nine year old performed every experiment in the book.

Intent on becoming “an engineer of a locomotive,” Edison became involved with the Grand Trunk Railway at age 12, peddling snacks and *Detroit Free Press* newspapers. By the time he was 14 he started his own rag, the *Weekly Herald*; it continued for 24 issues and made a profit.

A year later he saved the life of the station master’s 3-year-old child who fell on the tracks. The grateful father rewarded Edison by teaching him telegraphy. Edison soon joined the roaming telegraphers traveling from city to city in search of work and the good life.

Edison’s first invention came out of necessity. Working as a telegrapher for Western Union, he was unable to keep up with the speed of the incoming Morse Code—50 words per minute in dots and dashes—which he would have to transcribe into longhand. He created a duplex system that reduced the incoming speed to 25 words per minute, but an angry supervisor shut it down.

Edison’s first patented invention, an electronic vote counter for a legislature, was an economic eye-opener for Edison. It was an utter failure, not because the technology failed to work; it worked perfectly. But it did not address a practical issue: “its speed in tallying votes would disrupt the delicate political status-quo,” he was told. The legislators needed time between votes to haggle, to negotiate. Edison discovered that the greatest invention was of no use if he could not sell it. He vowed to invent only commercially viable products.

Traveling across the country, Edison went to Boston where he repaired stock tickers, then refined the devices. He landed in New York without a penny in his pocket, but with a new stock ticker in his hand. The directors of a Western Union subsidiary were interested in his device. Prepared to accept $3,000 for his ticker, he wisely asked them to make an offer. They stunned him with $40,000! Between 1870 and 1876, Edison made 1,200 stock tickers for Western Union.

After Edison’s mother died, Edison’s father, age 59, married a 19 year old and had two children. Edison sent his father to locate a suitable site for an expanded research facility and the old man chose Menlo Park, N.J., where Edison built the first American
center for invention and innovation. Edison hired young bright engineers and inventors, men in his own image. Menlo Park became the scientific laboratory that gave birth to many of the devices that grandfathered our current technology.

In July, 1877, as Edison turned the handle of a cylindrical machine he shouted “Mary Had a Little Lamb.” The spectators were stunned when Edison replaced one cylinder with another, wound it again, and his high-pitched voice clearly echoed back the same refrain. Even Edison was dumbfounded: “I was never so taken aback in my life,” he said. It was the first phonograph, and an ancestor of today’s CD players.

The output of Menlo Park was nothing short of remarkable. It gave birth and reared the first mimeograph; the carbon mike and diaphragm that became the heart and soul of modern telephones; the kinetoscope, the earliest movie projector; the first silent film; the first dictaphone; the first storage battery; and, most importantly, the incandescent light bulb.

The story of Edison and light is almost biblical in nature; Edison said “let there be light,” and then made sure there was, without delay or rest. The incandescent bulb, a bulb that could last for many hours without burning up or using too much electricity, was a seminal invention, but Edison’s quest to generate sufficient electricity to light these bulbs in cities large and small was the progenitor of electrical utilities and shaped the world we live in. His Edison Electric Light Co. became General Electric.

His electric utilities also introduced the concept of giving away the razor while selling the blades. Edison instructed his power companies to replace burned-out bulbs without charge. It kept the customer happy and happy customers used electricity, for which they paid.

Edison’s first wife, Mary Stilwell, was a pretty, gentle Newark girl who bore him three children. Frail and sickly, Mary had to bear the brunt of Edison’s insensitivity. He thought she was a hypochondriac and called her Mary Stillsick. She died of typhoid fever. Unlike his first wife, Edison’s second wife, Mina Miller, could stand toe-to-toe with him. She gave him three more children, but he barely paid his kids any attention.

Much has been made about Edison’s loss of hearing. Some of Edison’s problems with speech and school may be attributable to early symptoms of hearing incapacity. No one can be certain when his hearing problems began and whether they arose from a birth defect, Scarlet fever, or a blow to his ear delivered by a train conductor who either struck
him in anger, or saved his life by grabbing on to his ears when Edison nearly fell off the train. As an adult, Edison had no hearing in his left ear, and only 20% hearing in his right one, making his invention of the phonograph nearly as remarkable as Beethoven’s Ninth Symphony.

Perhaps Edison’s most notable achievement was the manner in which he could take his inventions, produce practical products, make them cheap and useful, then use his Barnum-like marketing skills to get them into the market. At one point he was a very large shareholder of Western Union. His best friends were Henry Ford and Harvey Firestone.

An inveterate agnostic, Edison confronted death calmly and with a tinge of curiosity. His physician, Dr. Hubert Howe, who was present at his death, related how a few days before Edison passed away, “he was sitting in his chair apparently enjoying a pleasant dream. Suddenly opening his eyes ... his face illuminated with a smile, he said: ‘It is very beautiful over there.’”

In his last years, Edison suffered from diabetes, Bright’s disease, uremic poisoning and stomach ulcers. He died Oct. 13, 1931. Henry Ford understood his legacy, moving the entire Menlo Park facility to Dearborn, Mich, for his Edisonia Museum. Edison coined two phrases that summed up his philosophy: “Genius is about 2% inspiration and 98% respiration,” and “There is no substitute for hard work.”

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