Ernst Werner von Siemens Biography

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Biography

Ernst Werner von Siemens was born at Lenthe, Hanover, Germany, in December 1816, the oldest of four brothers. After receiving an education at Lübeck, he went into the army and became an officer. However, he was eventually sent to prison for dueling. Making good use of his time, Siemens set up a laboratory in his cell where he experimented on gold and silver plating, selling the rights to his process which he patented in 1842. He also experimented with nickel plating, independently of the work being done by John Wright.

Siemens established his reputation in 1846 when he modified the dial telegraph which had been invented by Charles Wheatstone in England. Siemens used "make-and-break" circuits to make the telegraph self-acting. Instead of using permanent magnets, he used self-generated electricity to activate magnetic field coils.

In 1847 Siemens, along with mechanic Johann Georg Halske (1814-1890), established Siemens & Halske, a company that manufactured and repaired telegraphs. They ran telegraph wires in Germany as well as Russia. Siemens & Halske eventually became one of the major electrical manufacturing companies in Europe.

Siemens also made numerous technical advances. In 1847 he made the first use of gutta-percha to insulate electric cables; in 1866 he independently discovered the dynamo-electrical principle and became interested in the development of the self-excited dynamo and electric-traction. He cofounded the Physical Society in Berlin, and delivered a paper on another of his interests, hot-air engines. He invented the ozone tube, an alcohol meter, electrolytic refining processes, and established an electrical standard of resistance based on mercury.

Siemens had sent his brother Karl Wilhelm Siemens (later known as Sir Charles William Siemens) to England to promote his projects and head the British branch of the company. There Carl invented and improved a water meter. In 1861 he worked with another brother, Friedrich Siemens (1826-1904), who had joined him in England in 1848, to devise a regenerative furnace which became the basis of the Siemens-Martin, or open-hearth, process used in the glass and steel industries. Carl tried to apply his regenerative principle to conserve heat that was wasted by steam engines, but was unsuccessful. In 1867 he delivered an important paper on electric generators before the Royal Society.

On December 13, 1892, one week before his seventy-sixth birthday, Ernst Siemens died a very rich man at Charlottenburg, Germany.