

Who invented the electric light bulb?

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If you ask almost any schoolboy or schoolgirl, "Who invented the electric light bulb?" they would say, "Thomas Edison." Edison, perhaps the most famous and successful inventor in modern times, was queried late in his career to settle a debate over what was his greatest invention. He replied without hesitation, "Incandescent electric lighting and power system."

Some scholars, however, believe that Dr. Isaac Adams Jr., a longtime resident of Gloucester, had invented a working, electric light bulb in 1865, 14 years before Edison produced his first successful bulb in 1879. With a minor exception, the design of the Adam's incandescent light bulb was virtually the same as Edison's invention. And yet very few people have ever heard of Dr. Adams' success.

Dr. Adams was born in Boston in 1836. His father, Isaac Adams Sr., was already a well-known inventor and businessman. The elder Adams played a great role in his son also becoming a well-known inventor and entrepreneur, although he did it unwittingly.

The elder Adams was a powerful, larger-than-life man who owned several companies in Boston. His primary enterprise was I&S Adams Company, a manufacturer of printing presses. One of his basic manual presses can still be seen at the Cape Ann Museum.

As a relatively young man, Isaac Sr. invented and had patented the first powered printing press for fine book printing. It was a breakthrough that became very successful because it led to the production of relatively inexpensive books that made literature available to everyone. As a result, Isaac Sr. became famous and one of the wealthiest men in Boston.

Originally, the strong-willed father did not want his son to follow in his footsteps. Instead he really wanted the

young man to be a medical doctor and gentleman. It was Isaac Sr.'s early life that led him to make such a plan for his boy.

Isaac Sr. was born into a large, poor farm family in rural New Hampshire. After his father died, the youngster had to help support his mother and siblings. So, at the age of 9, he left home to work in a cloth-making factory in Rochester, N.H. As a result of his impoverished beginnings, Isaac Sr. grew up wanting to become wealthy, and to have a son who would be the highly educated and refined "gentleman" that he could never be.

This is what drove the now-successful, elder Adams to put his son through a rigorous schooling experience. After attending private preparatory schools in Boston, young Adams graduated from Bowdoin College and, at his father's behest, went on to Harvard Medical School.

While he was at the medical school, young Isaac met a professor, Josiah Cooke, who changed his life and started him on the path to becoming an inventor. Cooke got the young man interested in the field of electrochemistry. With Cooke's encouragement, Isaac Jr. worked on the problem of plating base metals with nickel. While he was still in medical school, Isaac Jr. was the first chemist to develop a workable nickel plating process. It was an invention for which he would later receive a very valuable U.S. patent that would make his fortune.

How Isaac Jr. also came to invent the first incandescent bulb had its root in the next phase of Dr. Adams' education. The new medical doctor graduated from Harvard just as the Civil War was beginning. His father then sent him to another medical school, this time in Paris. Isaac Sr. wanted to get his son away from the war and increase the young man's medical knowledge. Isaac Jr. did as his father wished. But in reality, he didn't want to be a physician. Instead, he

wanted to pursue technology as a career. The young man's success with nickel plating, his strong educational background and the deep admiration he had for his father as an inventor and entrepreneur led Isaac Adams, Jr. to now consider such a goal. At this point, however, he didn't mention his intentions to the elder Adams.

In Paris, Isaac Jr. did study advanced medical techniques, but he also latched on to a technology that would become the basis of his electric light bulb invention. During the course of his studies, young Isaac met Monsieur A. Gaiffe, a Paris-based instrument maker and chemist. What intrigued Isaac the most among Gaiffe's technological bag of tricks were Geissler tubes. These are gas-filled glass tubes with electrodes sealed in each end. When a current is passed through the tube, the gas becomes "excited" and emits a low-level illumination, like a neon light. These devices were used at the time to help illuminate surgeries.

The young doctor became proficient in glass blowing and constructing the Geissler tubes. When he returned to Boston, he briefly set up a medical practice to please his father, but he soon turned to technology to earn his living. He designed and sold a range of Geissler tubes to a number of Boston companies to produce light for various applications. This led young Isaac to embark on a series of experiments to develop an incandescent bulb. He produced his first successful lamp using a carbon filament in 1865. But he then abandoned the technology, didn't seek a patent and went on to other, more lucrative products exploiting his patent on nickel plating.

So, why isn't Dr. Isaac Adams Jr., recognized for his contribution to the invention that Edison considered to be his greatest accomplishment? Perhaps part of the answer lies in the character and integrity of Dr. Adams.

In 1890, Dr. Adams had

retired from the nickel-plating business and was living in Annisquam. He was contacted by the law firm representing the United States Electric Lighting Company in their suit against Edison over the invention of the electric light bulb. The lawyers hoped that Dr. Adams would claim that he had invented the carbon filament electric light bulb before Edison. If upheld, it would have denied Edison the patent and his monopoly on the production of the light bulbs.

Unfortunately, for the lawyers, Dr. Adams' penchant for truth, honor and humility led him to describe his work during the patent trial in only the most accurate terms, when he could have easily made a case for his developments anticipating the Edison invention. He testified that his intention in researching the bulb was to develop glass sealing technology, not necessarily to produce an electric light bulb. And, besides, he said, he had no means to generate the power to provide a viable electric lighting system. So, that is why he never patented his bulb.

The result of Dr. Adams' testimony was that the court found that Thomas Edison was the first to develop, patent and exploit the electric light bulb and power system technologies. And Edison was awarded the patent rights. So, most people then just forgot about Dr. Adams' contribution to electric lighting.

Dr. Adams passed away on July 24, 1911 in Annisquam. He is well remembered as the inventor of the nickel plating process. But, now you know that he also made other significant developments including a working electric light bulb fourteen years before Thomas Edison.

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