



# TESLA Life and Legacy - Coming to America

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## — Coming to America —

Following his discovery in Budapest, Tesla was hired by electric power companies in Strasbourg and Paris to improve their DC generation facilities. In Germany and France, he attempted to interest investors in his concept for an AC motor, but had no success. It was clear that in order to realize his idea, he would have to meet the greatest electrical engineer in the world—Thomas Alva Edison.

At age 28, Nikola Tesla arrived in New York City and was shocked by what he discovered. "What I had left was beautiful, artistic and fascinating in every way; what I saw here was machined, rough and unattractive. It [America] is a century behind Europe in civilization." The Serbian immigrant had four cents in his pocket, some mathematical computations, a drawing of an idea for a flying machine, and a letter of introduction from Charles Batchelor, one of Edison's business associates in Europe.

Electricity was first introduced to New York in the late 1870s. Edison's incandescent lamp had created an astonishing demand for electric power. And his DC power station on Pearl Street in lower Manhattan was quickly becoming a monopoly. On the streets, single poles carried dozens of crooked crossbeams supporting sagging wires, and the exposed electrical wiring was a constant danger. Unsuspecting children would scale the poles only to meet an untimely electrical demise. The residents of Brooklyn became so accustomed to dodging shocks from electric trolley tracks that their baseball team was called the *Brooklyn Dodgers*. In spite of the perils, wealthy New Yorkers rushed to have their homes wired, the most important being the banker, J.P. Morgan, who had invested heavily in Edison.

It was into this state of affairs that the 6'4" immigrant from Eastern Europe entered Edison's office. Thrilled and terrified to meet his hero, Tesla handed Edison his letter of recommendation: It read: "My Dear Edison: I know two great men and you are one of them. The other is this young man!" Tesla proceeded to describe the engineering work he had done, and his plans for an alternating current motor.

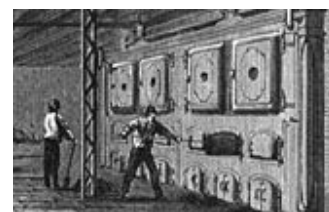
Edison knew little of alternating current and did not care to learn more about it. In short, AC power sounded like competition to Edison. But there was something different about Tesla, and Edison immediately hired him to make improvements in his DC generation plants. Tesla claimed that Edison promised him \$50,000 if he succeeded, perhaps thinking it an impossible undertaking. But the potential of so much money appealed mightily to the impoverished immigrant.

Both Tesla and Edison shared a common trait of genius in that neither of them seemed to need much sleep. Edison could go for days, taking occasional catnaps on a sofa in his office. Tesla claimed that his working hours at the Edison Machine Works were 10:30 a.m. till 5 a.m. the next day. Even into old age Tesla said he only slept two or three hours a night.

That's where the similarity ended. Tesla relied on moments of inspiration, perceiving the invention in his brain in precise detail before moving to the construction stage. Edison was a trial and error man who described invention as five percent inspiration and 95 percent perspiration. Edison was self-taught. Tesla had a formal European education.



Left: Tesla at age 29  
Right: Thomas Edison



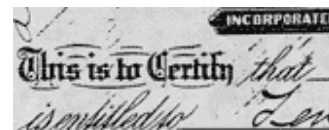
Edison System Central Station on Pearl Street, 1883 (Courtesy Smithsonian Institution)

View Tesla's [electric arc lamp patent](#).

View Tesla's [alternating motor patent](#).



Edison jumbo dynamo from Pearl Street



Stock certificate for the Tesla Electric Light and Manufacturing Company

It was only a matter of time until their differences would lead to conflict.

Several months after Edison employed him, Tesla announced that his work was successfully completed. When Tesla asked to be paid, however, Edison seemed astonished. He explained that the offer of \$50,000 had been made in jest. "When you become a full-fledged American you will appreciate an American joke," Edison said. Shocked and disgusted, Tesla immediately resigned.

Word began to spread that a foreigner of unusual talent was digging ditches to stay alive. Investors approached Tesla and asked him to develop an improved method for arc lighting. Although this was not the opportunity he had hoped for, the group was willing to finance the Tesla Electric Light Company. The proud new owner set to work and invented a unique arc lamp of beautiful design and efficiency. Unfortunately, all of the money earned went to the investors and all Tesla got was a stack of worthless stock certificates.

But his luck was about to change. Mr. A.K. Brown of the Western Union Company, agreed to invest in Tesla's idea for an AC motor. In a small laboratory just a short distance from Edison's office, Tesla quickly developed all the components for the system of AC power generation and transmission that is used universally throughout the world today. "The motors I build there," said Tesla, "were exactly as I imagined them. I made no attempt to improve the design, but merely reproduced the pictures as they appeared to my vision and the operation was always as I expected." The battle to produce his motor was over. But the struggle to introduce it commercially was only just beginning.

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