

## Atlantis Online

Science & Technology => History of Science => Topic started by: Lynn Rotanno on June 28, 2009, 02:23:22 am

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Title: **Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:23:22 am**

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Nikola Tesla (10 July 1856 – 7 January 1943) was an inventor and a mechanical and electrical engineer. Tesla was born in the village of Smiljan near the town of Gospić, Vojna Krajina, in the territory of today's Croatia. He was an ethnic Serb subject of the Austrian Empire and later became an American citizen.[2] Tesla is often described as an important scientist and inventor of the modern age, a man who "shed light over the face of Earth".[3] He is best known for many revolutionary contributions in the field of electricity and magnetism in the late 19th and early 20th centuries. Tesla's patents and theoretical work formed the basis of modern alternating current electric power (AC) systems, including the polyphase power distribution systems and the AC motor, with which he helped usher in the Second Industrial Revolution.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:23:45 am**

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After his demonstration of wireless communication (radio) in 1894 and after being the victor in the "War of Currents", he was widely respected as one of the greatest electrical engineers who worked in America.[4] Much of his early work pioneered modern electrical engineering and many of his discoveries were of groundbreaking importance. During this period, in the United States, Tesla's fame rivaled that of any other inventor or scientist in history or popular culture,[5] but due to his eccentric personality and his seemingly unbelievable and sometimes bizarre claims about possible scientific and technological developments, Tesla was ultimately ostracized and regarded as a mad scientist.[6][7] Never having put much focus on his finances, Tesla died impoverished at the age of 86.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:24:01 am**

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The SI unit measuring magnetic flux density or magnetic induction (commonly known as the magnetic field "B"), the tesla, was named in his honor (at the Conférence Générale des Poids et Mesures, Paris, 1960), as well as the Tesla effect of wireless energy transfer to wirelessly power electronic devices which Tesla demonstrated on a low scale (lightbulbs) as early as 1893 and aspired to use for the intercontinental transmission of industrial energy levels in his unfinished Wardencliff Tower project.

Aside from his work on electromagnetism and electromechanical engineering, Tesla has contributed in varying degrees to the establishment of robotics, remote control, radar and computer science, and to the expansion of ballistics, nuclear physics,[8] and theoretical physics. In 1943, the Supreme Court of the United States credited him as being the inventor of the radio.[9] Many of his achievements have been used, with some controversy, to support various pseudosciences, UFO theories, and early New Age occultism.

Tesla is honored in Serbia and Croatia, as well as in the Czech Republic and Romania. He was awarded the highest order of the White Lion by Czechoslovakia.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:25:26 am**

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(<http://upload.wikimedia.org/wikipedia/commons/d/d4/N.Tesla.JPG>)

Nikola Tesla  
Nikola Tesla (1856-1943), circa 1896.  
Nikola Tesla (1856-1943), circa 1896.  
Born 10 July 1856(1856-07-10)  
Smiljan, Austrian Empire  
(Military Frontier)  
Died 7 January 1943 (aged 86)  
New York City, New York, USA  
Residence Austrian Empire  
Kingdom of Hungary  
France  
USA  
Citizenship Austrian Empire (pre-1891)  
American (post-1891)  
Ethnicity Serbian  
Fields Mechanical and electrical engineering  
Institutions Edison Machine Works  
Tesla Electric Light & Manufacturing  
Westinghouse Electric & Manufacturing Co.  
Known for Tesla coil  
Tesla turbine  
Teleforce  
Tesla's oscillator  
Tesla electric car  
Tesla principle

Tesla's Egg of Columbus  
Alternating current  
Induction motor  
Rotating magnetic field  
Wireless technology  
Particle beam weapon  
Death ray  
Terrestrial stationary waves  
Bifilar coil  
Telegeodynamics  
Electrogravitics  
Influences Ernst Mach  
Influenced Gano Dunn  
Notable awards Edison Medal (1916)  
Elliott Cresson Gold Medal (1893)  
John Scott Medal (1934)  
Religious stance Serbian Orthodox[1]  
Signature

([http://upload.wikimedia.org/wikipedia/en/4/41/Nikola\\_Tesla\\_signature.png](http://upload.wikimedia.org/wikipedia/en/4/41/Nikola_Tesla_signature.png))

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:26:48 am**

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([http://upload.wikimedia.org/wikipedia/commons/thumb/b/bc/Nikola\\_Tesla\\_Memorial\\_Center.JPG/800px-Nikola\\_Tesla\\_Memorial\\_Center.JPG](http://upload.wikimedia.org/wikipedia/commons/thumb/b/bc/Nikola_Tesla_Memorial_Center.JPG/800px-Nikola_Tesla_Memorial_Center.JPG))

Nikola Tesla's birth house and statue in the village of Smiljan, in Croatia

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:27:16 am**

### ***Early years***

Tesla was born to Serbian parents in the village of Smiljan near the town of Gospić, in the Austrian Empire (today's Croatia).

His baptismal certificate reports that he was born on 28 June (N.S. 10 July), 1856, to Father Milutin Tesla, a priest in the Serbian Orthodox Church, Metropolitanate of Sremski Karlovci and Đuka Mandić. His paternal origin is thought to be either of one of the local Serb clans in the Tara valley or from the Herzegovinian noble Pavle Orlović[10] His mother Đuka , daughter of a Serbian Orthodox Church priest came from a family domiciled in Lika and Banija, but with deeper origins to Kosovo. She was talented in making home craft tools and memorized many Serbian epic poems, but never learned to read.[11]

Nikola was the fourth of five children, having one older brother (Dane, who was killed in a horse-riding accident when Nikola was five) and three sisters (Milka, Angelina and Marica).[12]:3 His family moved to Gospić in 1862. Tesla went to school in Karlovac. He finished a four year term in the span of three years.[13]

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:27:38 am**

Tesla then studied electrical engineering at the Austrian Polytechnic in Graz (1875). While there, he studied the uses of alternating current. Some sources say he received Baccalaureate degrees from the university at Graz.[14][15][16] However, the university claims that he did not receive a degree and did not continue beyond the first semester of his third year, during which he stopped attending lectures.[17][18][19][20] In December 1878 he left Graz and broke all relations with his family. His friends thought that he had drowned in Mura. He went to Maribor, (today's Slovenia), where he was first employed as an assistant engineer for a year. He suffered a nervous breakdown during this time. Tesla was later persuaded by his father to attend the Charles-Ferdinand University in Prague, which he attended for the summer term of 1880. Here, he was influenced by Ernst Mach. However, after his father died, he left the university, having completed only one term.[21]

Tesla engaged in reading many works, memorizing complete books, supposedly having a photographic memory.[22] Tesla related in his autobiography that he experienced detailed moments of inspiration. During his early life, Tesla was stricken with illness time and time again. He suffered a peculiar affliction in which blinding flashes of light would appear before his eyes, often accompanied by hallucinations. Much of the time the visions were linked to a word or idea he might have come across; just by hearing the name of an item, he would involuntarily envision it in realistic detail. Modern-day synesthetes report similar symptoms. Tesla would visualise an invention in his brain in precise form before moving to the construction stage; a technique sometimes known as picture thinking. Tesla also often had flashbacks to events that had happened previously in his life; this began to happen during childhood.[22]

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:43:02 am**

In 1880, he moved to Budapest to work under Tivadar Puskás in a telegraph company,[23] the National Telephone Company. There, he met Nebojša Petrović, a young, Serbian inventor who lived in Austria. Although their encounter was brief, they did work on a project together using twin turbines to create continual power. On the opening of the telephone exchange in Budapest, 1881, Tesla became the chief electrician to the company, and was later engineer for the country's first telephone system. He also developed a device that, according to some, was a telephone repeater or amplifier, but according to others could have been the first loudspeaker.[24]

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:44:22 am**

([http://upload.wikimedia.org/wikipedia/commons/6/60/Tesla\\_young.jpg](http://upload.wikimedia.org/wikipedia/commons/6/60/Tesla_young.jpg))

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Title: **Re: Nikola Tesla**  
Post by: **Lynn Rotanno** on **June 28, 2009, 02:48:09 am**

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(<http://upload.wikimedia.org/wikipedia/commons/f/f1/3phase-rmf-noadd-60f-airopt.gif>)

3phase rmf

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Title: **Re: Nikola Tesla**  
Post by: **Lynn Rotanno** on **June 28, 2009, 02:48:53 am**

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#### ***United States and France***

In 1882 he moved to Paris, France, to work as an engineer for the Continental Edison Company, designing improvements to electric equipment. In the same year, Tesla conceived the induction motor and began developing various devices that use rotating magnetic fields for which he received patents in 1888.

Soon thereafter, Tesla was awakened from a dream in which his mother had died, "And I knew that this was so".[25] After her death, Tesla fell ill. He spent two to three weeks recuperating in Gospić and the village of Tominaj near Gračac, his mother's birthplace.

On 6 June 1884, Tesla first arrived in the US in New York City[26] with little besides a letter of recommendation from Charles Batchelor, a former employer. In the letter of recommendation to Thomas Edison, Batchelor wrote, "I know two great men and you are one of them; the other is this young man." Edison hired Tesla to work for his Edison Machine Works. Tesla's work for Edison began with simple electrical engineering and quickly progressed to solving some of the company's most difficult problems. Tesla was even offered the task of completely redesigning the Edison company's direct current generators.[27]

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Title: **Re: Nikola Tesla**  
Post by: **Lynn Rotanno** on **June 28, 2009, 02:48:59 am**

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Title: **Re: Nikola Tesla**  
Post by: **Lynn Rotanno** on **June 28, 2009, 02:49:45 am**

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Tesla claims he was offered US\$50,000 (~ US\$1.1 million in 2007, adjusted for inflation)[28] if he redesigned Edison's inefficient motor and generators, making an improvement in both service and economy.[22]:54-57 Tesla said he worked night and day on the project and gave the Edison Company several profitable new patents in the process. In 1885 when Tesla inquired about the payment for his work, Edison replied, "Tesla, you don't understand our American humor," thus breaking his word.[29][30] Earning a mere US\$18 per week, Tesla would have had to work for 53 years to earn the amount he was promised. The offer was equal to the initial capital of the company. Tesla resigned when he was refused a raise to US\$25 per week.[31]

Tesla eventually found himself digging ditches for a short period of time for the Edison company. Tesla used this time to focus on his AC polyphase system.[22]

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Title: **Re: Nikola Tesla**  
Post by: **Lynn Rotanno** on **June 28, 2009, 02:50:55 am**

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(<http://upload.wikimedia.org/wikipedia/en/thumb/7/7a/RMFpatent.PNG/284px-RMFpatent.PNG>)

Patent

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Title: **Re: Nikola Tesla**  
Post by: **Lynn Rotanno** on **June 28, 2009, 02:51:27 am**

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#### ***Middle years***

In 1886, Tesla formed his own company, Tesla Electric Light & Manufacturing. The initial financial investors disagreed with Tesla on his plan for an alternating current motor and eventually relieved him of his duties at the company. Tesla worked in New York as a common laborer from 1886 to 1887 to feed himself and raise capital for his next project. In 1887, he constructed the initial brushless alternating current induction motor, which he demonstrated to the American Institute of Electrical Engineers (now IEEE) in 1888. In the same year, he developed the principles of his Tesla coil and began working with George Westinghouse at Westinghouse Electric & Manufacturing Company's Pittsburgh labs. Westinghouse listened to his ideas for polyphase systems which would allow transmission of alternating current electricity over long distances.

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Title: **Re: Nikola Tesla**  
Post by: **Lynn Rotanno** on **June 28, 2009, 02:51:37 am**

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In April 1887, Tesla began investigating what would later be called X-rays using his own single node vacuum tubes (similar to his patent #514,170). This device differed from other early X-ray tubes in that they had no target electrode. The modern term for the phenomenon produced by this device is bremsstrahlung (or braking radiation). We now know that this device operated by emitting electrons from the single electrode through a combination of field electron emission and thermionic emission. Once liberated, electrons are strongly repelled

by the high electric field near the electrode during negative voltage peaks from the oscillating HV output of the Tesla Coil, generating X-rays as they collide with the glass envelope. He also used Geissler tubes. By 1892, Tesla became aware of the skin damage that Wilhelm Röntgen later identified as an effect of X-rays.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:51:48 am**

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In the early research, Tesla devised several experimental setups to produce X-rays. Tesla held that, with his circuits, the "instrument will [... enable one to] generate Roentgen rays of much greater power than obtainable with ordinary apparatus".[47] He also commented on the hazards of working with his circuit and single node X-ray producing devices. Of his many notes in the early investigation of this phenomenon, he attributed the skin damage to various causes. One of the options for the cause, which is not in conformity with conventional X-ray production, was that the ozone generated rather than the radiation was responsible. He believed early on that damage to the skin was not due to the Roentgen rays, but the ozone generated in contact with the skin, and to a lesser extent, nitrous acid. Tesla held that these were in fact longitudinal waves, such as those produced in waves in plasma. In a plasma or a confined space, there can exist waves which are either longitudinal or transverse, or a mixture of both. There are known examples of this and these plasma waves can occur in the situation of force-free magnetic fields.[48][49] His hypotheses and experiments were confirmed by others.[50]

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:52:02 am**

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Tesla continued research in the field and, later, observed an assistant severely "burnt" by X-rays in his lab. He performed several experiments prior to Roentgen's discovery (including photographing the bones of his hand; later, he sent these images to Roentgen) but didn't make his findings widely known; much of his research was lost in the 5th Avenue lab fire of March 1895.

A "world system" for "the transmission of electrical energy without wires" that depends upon the electrical conductivity was proposed in which transmission in various natural media with current that passes between the two points are used to power devices. In a practical wireless energy transmission system using this principle, a high-power ultraviolet beam might be used to form a vertical ionized channel in the air directly above the transmitter-receiver stations. The same concept is used in virtual lightning rods, the electrolaser electroshock weapon,[51] and has been proposed for disabling vehicles.[52][53]

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:52:12 am**

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Tesla demonstrated "the transmission of electrical energy without wires" that depends upon electrical conductivity as early as 1891. The Tesla effect (named in honor of Tesla) is the archaic term for an application of this type of electrical conduction (that is, the movement of energy through space and matter; not just the production of voltage across a conductor).[22]:174[54]

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:52:26 am**

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On 30 July 1891, he became a naturalized citizen of the United States at the age of 35. Tesla established his 35 South Fifth Avenue laboratory in New York during this same year. Later, Tesla would establish his Houston Street laboratory in New York at 46 E. Houston Street. There, at one point while conducting mechanical resonance experiments with electro-mechanical oscillators he generated a resonance of several surrounding buildings but, due to the frequencies involved, not his own building, causing complaints to the police. As the speed grew he hit the resonant frequency of his own building and, belatedly realizing the danger, he was forced to apply a sledgehammer to terminate the experiment, just as the astonished police arrived.[55] He also lit vacuum tubes wirelessly at both of the New York locations, providing evidence for the potential of wireless power transmission.[56]

Some of Tesla's closest friends were artists. He befriended Century Magazine editor Robert Underwood Johnson, who adapted several Serbian poems of Jovan Jovanović Zmaj (which Tesla translated). Also during this time, Tesla was influenced by the Vedic philosophy teachings of the Swami Vivekananda.[57]

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:52:41 am**

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When Tesla was 36 years old, the first patents concerning the polyphase power system were granted. He continued research of the system and rotating magnetic field principles. It is curious that Nikola Tesla, a pioneer of AC systems, was born approximately 100 km north of Šibenik where the first power plant in Croatia was constructed. It may be a coincidence that in May 1892, Tesla held a lecture on alternating systems in the City Hall of Zagreb (the capital of Croatia) at the time of the beginning of the preparations to construct the Jaruga I hydroelectric power plant.[58] Tesla served, from 1892 to 1894, as the vice president of the American Institute of Electrical Engineers, the forerunner (along with the Institute of Radio Engineers) of the modern-day IEEE. From 1893 to 1895, he investigated high frequency alternating currents. He generated AC of one million volts using a conical Tesla coil and investigated the skin effect in conductors, designed tuned circuits, invented a machine for inducing sleep, cordless gas discharge lamps, and transmitted electromagnetic energy without wires, building the first radio transmitter. In St. Louis, Missouri, Tesla made a demonstration related to radio communication in 1893. Addressing the Franklin Institute in Philadelphia, Pennsylvania and the National Electric Light Association, he described and demonstrated in detail its principles. Tesla's demonstrations were written about widely through various media outlets. Tesla also investigated harvesting energy that is present throughout space. He believed that it was just merely a question of time when men will succeed in attaching their machinery to the very wheelwork of nature, stating:

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:53:04 am**

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“ Ere many generations pass, our machinery will be driven by a power obtainable at any point of the universe. ”

—"Experiments With Alternate Currents Of High Potential And High Frequency" (February 1892)

Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:53:27 am**

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At the 1893 World's Fair, the World's Columbian Exposition in Chicago, an international exposition was held which for the first time devoted a building to electrical exhibits. It was a historic event as Tesla and George Westinghouse introduced visitors to AC power by using it to illuminate the Exposition. On display were Tesla's fluorescent lamps and single node bulbs. An observer noted:

Within the room was suspended two hard-rubber plates covered with tin foil. These were about fifteen feet apart, and served as terminals of the wires leading from the transformers. When the current was turned on, the vacuum bulbs or tubes, which had no wires connected to them, but lay on a table between the suspended plates, or which might be held in the hand in almost any part of the room, were made luminous. These were the same experiments and the same apparatus shown by Mr. Tesla in London about two years ago, where they produced so much wonder and astonishment.[59]

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:53:45 am**

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Tesla also explained the principles of the rotating magnetic field and induction motor by demonstrating how to make an egg made of copper stand on end in his demonstration of the device he constructed known as the "Egg of Columbus".

Also in the late 1880s, Tesla and Edison became adversaries in part due to Edison's promotion of direct current (DC) for electric power distribution over the more efficient alternating current advocated by Tesla and Westinghouse. Until Tesla invented the induction motor, AC's advantages for long distance high voltage transmission were counterbalanced by the inability to operate motors on AC. As a result of the "War of Currents," Edison and Westinghouse went nearly bankrupt, so in 1897, Tesla released Westinghouse from contract, providing Westinghouse a break from Tesla's patent royalties. Also in 1897, Tesla researched radiation which led to setting up the basic formulation of cosmic rays.[60]

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:53:58 am**

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When Tesla was forty-one years old, he filed the first basic radio patent (U.S. Patent 645,576). A year later, he demonstrated a radio-controlled boat to the US military, believing that the military would want things such as radio-controlled torpedoes. Tesla had developed the "Art of Telautomatics", a form of robotics, as well as the technology of remote control.[61] In 1898, a radio-controlled boat was demonstrated to the public during an electrical exhibition at Madison Square Garden. These devices had an innovative coherer and a series of logic gates. Tesla called his boat a "teleautomaton" and said of it, "You see there the first of a race of robots, mechanical men which will do the laborious work of the human race." [62] Radio remote control remained a novelty until the 1960s. In the same year, Tesla devised an "electric igniter" or spark plug for internal combustion gasoline engines. He gained U.S. Patent 609,250, "Electrical Igniter for Gas Engines", on this mechanical ignition system. Tesla lived in the former Gerlach Hotel, renamed The Radio Wave building, at 49 W 27th St. (between Broadway and Sixth Avenue), Lower Manhattan, before the end of the century where he conducted the radio wave experiments. A commemorative plaque was placed on the building in 1977 to honor his work.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:54:41 am**

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([http://upload.wikimedia.org/wikipedia/commons/0/00/TeslaWirelessPower1891\\_adjusted.png](http://upload.wikimedia.org/wikipedia/commons/0/00/TeslaWirelessPower1891_adjusted.png))

Wireless transmission of power and energy demonstration during his high frequency and potential lecture of 1891.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:55:36 am**

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(<http://upload.wikimedia.org/wikipedia/commons/thumb/c/c5/US390721.png/384px-US390721.png>)

Nikola Tesla's AC dynamo used to generate AC which is used to transport electricity across great distances. It is contained in U.S. Patent 390,721.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:57:49 am**

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Quote

**Electromechanical devices and principles developed by Nikola Tesla:**

- \* Various devices that use rotating magnetic fields (1882)
- \* The Induction motor, rotary transformers, and "high" frequency alternators
- \* The Tesla coil,[32] his magnifying transmitter, and other means for increasing the intensity of electrical oscillations (including condenser discharge transformations and the Tesla oscillators[33][34])
- \* Alternating current long-distance electrical transmission system[35] (1888) and other methods and devices for power transmission
- \* Systems for wireless communication (prior art for the invention of radio) and radio frequency oscillators[36]
- \* Robotics and the "AND" logic gate[37]
- \* Electrotherapy Tesla currents[38][39][40]
- \* Wireless transfer of electricity and the Tesla effect[41][42]
- \* Tesla impedance phenomena[43]
- \* Tesla electro-static field
- \* Tesla principle
- \* Bifilar coil
- \* Telegeodynamics
- \* Tesla insulation

- \* Tesla impulses[44]
- \* Tesla frequencies[32]
- \* Tesla discharge[32]
- \* Forms of commutators and methods of regulating third brushes
- \* Tesla turbines (eg., bladeless turbines) for water, steam and gas and the Tesla pumps
- \* Tesla igniter
- \* Corona discharge ozone generator
- \* Tesla compressor
- \* X-rays Tubes using the Bremsstrahlung process
- \* Devices for ionized gases and "Hot Saint Elmo's Fire".[45]
- \* Devices for high field emission
- \* Devices for charged particle beams
- \* Phantom streaming devices[46]
- \* Arc light systems
- \* Methods for providing extremely low level of resistance to the passage of electrical current (predecessor to superconductivity)
- \* Voltage multiplication circuitry
- \* Devices for high voltage discharges
- \* Devices for lightning protection
- \* VTOL aircraft
- \* Dynamic theory of gravity
- \* Concepts for electric vehicles
- \* Polyphase systems

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:58:38 am**

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### ***Colorado Springs***

In 1899, Tesla decided to move and began research in Colorado Springs, Colorado, where he would have room for his high-voltage, high-frequency experiments. Upon his arrival he told reporters that he was conducting wireless telegraphy experiments transmitting signals from Pikes Peak to Paris. Tesla's diary contains explanations of his experiments concerning the ionosphere and the ground's telluric currents via transverse waves and longitudinal waves.[63] At his lab, Tesla proved that the earth was a conductor, and he produced artificial lightning (with discharges consisting of millions of volts, and up to 135 feet long).[64] Tesla also investigated atmospheric electricity, observing lightning signals via his receivers. Reproductions of Tesla's receivers and coherer circuits show an unpredicted level of complexity (e.g., distributed high-Q helical resonators, radio frequency feedback, crude heterodyne effects, and regeneration techniques).[65] Tesla stated that he observed stationary waves during this time.[66]

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:58:49 am**

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Tesla researched ways to transmit power and energy wirelessly over long distances (via transverse waves, to a lesser extent, and, more readily, longitudinal waves). He transmitted extremely low frequencies through the ground as well as between the Earth's surface and the Kennelly-Heaviside layer. He received patents on wireless transceivers that developed standing waves by this method. In his experiments, he made mathematical calculations and computations based on his experiments and discovered that the resonant frequency of the Earth was approximately 8 Hertz (Hz). In the 1950s, researchers confirmed that the resonant frequency of the Earth's ionospheric cavity was in this range (later named the Schumann resonance).

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:59:01 am**

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In Colorado, Tesla carried out various long distance power transmission experiments. Tesla effect is the application of a type of electrical conduction (that is, the movement of energy through space and matter; not just the production of voltage across a conductor). Through longitudinal waves, Tesla transferred energy to receiving devices. He sent electrostatic forces through natural media across a conductor situated in the changing magnetic flux and transferred power to a conducting receiving device (such as Tesla's wireless bulbs).

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:59:13 am**

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In the Colorado Springs lab, Tesla observed unusual signals that he later thought may have been evidence of extraterrestrial radio communications coming from Venus or Mars.[67] He noticed repetitive signals from his receiver which were substantially different from the signals he had noted from storms and earth noise. Specifically, he later recalled that the signals appeared in groups of one, two, three, and four clicks together. Tesla had mentioned before this event and many times after that he thought his inventions could be used to talk with other planets. There have even been claims that he invented a "Teslascope" for just such a purpose. It is debatable what type of signals Tesla received or whether he picked up anything at all. Research has suggested that Tesla may have had a misunderstanding of the new technology he was working with,[68] or that the signals Tesla observed may have simply been an observation of a non-terrestrial natural radio source such as the Jovian plasma torus signals.[69]

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:59:27 am**

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Tesla left Colorado Springs on 7 January 1900. The lab was torn down and its contents sold to pay debts. The Colorado experiments prepared Tesla for his next project, the establishment of a wireless power transmission facility that would be known as Wardenclyffe. Tesla was granted U.S. Patent 685,012 for the means of increasing the intensity of electrical oscillations. The United States Patent Office classification system currently assigns this patent to the primary Class 178/43 ("telegraphy/space induction"), although the other applicable

classes include 505/825 ("low temperature superconductivity-related apparatus").

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 02:59:59 am**

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([http://upload.wikimedia.org/wikipedia/commons/thumb/e/e5/Tesla\\_colorado\\_adjusted.jpg/746px-Tesla\\_colorado\\_adjusted.jpg](http://upload.wikimedia.org/wikipedia/commons/thumb/e/e5/Tesla_colorado_adjusted.jpg/746px-Tesla_colorado_adjusted.jpg))

Publicity picture of a participant sitting in his laboratory in Colorado Springs with his "Magnifying Transmitter" generating millions of volts. The arcs are about 7 meters (23 ft) long. (Tesla's notes identify this as a multiple exposure photograph.)

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:00:53 am**

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(<http://upload.wikimedia.org/wikipedia/commons/thumb/6/66/TeslaWirelessLightsCS.png/800px-TeslaWirelessLightsCS.png>)

An experiment in Colorado Springs. This bank of lights is receiving power from a distant transmitter

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:01:27 am**

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(<http://upload.wikimedia.org/wikipedia/commons/6/61/TeslaWirelessIllustration.png>)

Colorado Springs experiment where grounded tuned coil is in resonance with distant transmitter; a light is glowing near the bottom.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:02:08 am**

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### ***Later years***

In 1900, with US\$150,000 (51 % from J. Pierpont Morgan), Tesla began planning the Wardenclyffe Tower facility. In June 1902, Tesla's lab operations were moved to Wardenclyffe from Houston Street. The tower was finally dismantled for scrap during World War I.[70] Newspapers of the time labeled Wardenclyffe "Tesla's million-dollar folly". In 1904, the US Patent Office reversed its decision and awarded Guglielmo Marconi the patent for radio, and Tesla began his fight to re-acquire the radio patent. On his 50th birthday in 1906, Tesla demonstrated his 200 hp (150 kW) 16,000 rpm bladeless turbine. During 1910–1911 at the Waterside Power Station in New York, several of his bladeless turbine engines were tested at 100–5000 hp.

Since the Nobel Prize in Physics was awarded to Marconi for radio in 1909, Thomas Edison and Tesla were mentioned as potential laureates to share the Nobel Prize of 1915 in a press dispatch, leading to one of several Nobel Prize controversies. Some sources have claimed that due to their animosity toward each other neither was given the award, despite their enormous scientific contributions, and that each sought to minimize the other one's achievements and right to win the award, that both refused to ever accept the award if the other received it first, and that both rejected any possibility of sharing it.[71]

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:02:39 am**

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In the following events after the rumors, neither Tesla nor Edison won the prize (although Edison did receive one of 38 possible bids in 1915, and Tesla did receive one bid out of 38 in 1937).[72] Earlier, Tesla alone was rumored to have been nominated for the Nobel Prize of 1912. The rumored nomination was primarily for his experiments with tuned circuits using high-voltage high-frequency resonant transformers.

In 1915, Tesla filed a lawsuit against Marconi attempting, unsuccessfully, to obtain a court injunction against Marconi's claims. After Wardenclyffe, Tesla built the Telefunken Wireless Station in Sayville, Long Island. Some of what he wanted to achieve at Wardenclyffe was accomplished with the Telefunken Wireless. In 1917, the facility was seized and torn down by the Marines, because it was suspected that it could be used by German spies.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:02:53 am**

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Before World War I, Tesla looked overseas for investors to fund his research. When the war started, Tesla lost the funding he was receiving from his patents in European countries. After the war ended, Tesla made predictions regarding the relevant issues of the post-World War I environment, in a printed article (20 December 1914). Tesla believed that the League of Nations was not a remedy for the times and issues. Tesla started to exhibit pronounced symptoms of obsessive-compulsive disorder in the years following. He became obsessed with the number three; he often felt compelled to walk around a block three times before entering a building, demanded a stack of three folded cloth napkins beside his plate at every meal, etc. The nature of OCD was little understood at the time and no treatments were available, so his symptoms were considered by some to be evidence of partial insanity, and this undoubtedly hurt what was left of his reputation.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:03:02 am**

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At this time, he was staying at the Waldorf-Astoria Hotel, renting in an arrangement for deferred payments. Eventually, the Wardenclyffe deed was turned over to George Boldt, proprietor of the Waldorf-Astoria, to pay a US\$20,000 debt. In 1917, around the time that the Wardenclyffe Tower was demolished by Boldt to make the land a more viable real estate asset, Tesla received AIEE's highest honor, the Edison Medal.

Tesla, in August 1917, first established principles regarding frequency and power level for the first primitive radar units.[73] In 1934, Émile Girardeau, working with the first French radar systems, stated he was building said systems "conceived according to the principles stated by Tesla". By the 1920s, Tesla was reportedly negotiating with the United Kingdom government about a ray system. Tesla had also stated

that efforts had been made to steal the so called "death ray". It is suggested that the removal of the Chamberlain government ended negotiations.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:03:15 am**

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On Tesla's seventy-fifth birthday in 1931, Time magazine put him on its cover. The cover caption noted his contribution to electrical power generation. Tesla received his last patent in 1928 for an apparatus for aerial transportation which was the first instance of VTOL aircraft. By the end of 1931, Tesla released "On Future Motive Power" which covered an ocean thermal energy conversion system. In 1934, Tesla wrote to consul Janković of his homeland. The letter contained a message of gratitude to Mihajlo Pupin who had initiated a donation scheme by which American companies could support Tesla. Tesla refused the assistance, choosing instead to live on a modest pension received from Yugoslavia, and to continue his research.

In 1936, Tesla wrote in a telegram to Vladko Maček: "I'm equally proud of my Serbian origin and my Croatian homeland. Long live all Yugoslavs."<sup>[74]</sup>

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:04:06 am**

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([http://upload.wikimedia.org/wikipedia/commons/ff/ff/BrochureWardenclyffe\\_.PNG](http://upload.wikimedia.org/wikipedia/commons/ff/ff/BrochureWardenclyffe_.PNG))

The Wardenclyffe Tower facility.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:04:37 am**

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### ***Field theories***

When he was eighty-one, Tesla stated he had completed a "dynamic theory of gravity". He stated that it was "worked out in all details" and that he hoped to soon give it to the world.<sup>[75]</sup> The theory was never published.

The bulk of the theory was developed between 1892 and 1894, during the period that he was conducting experiments with high frequency and high potential electromagnetism and patenting devices for their use. Reminiscent of Mach's principle, Tesla stated in 1925 that:

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:05:05 am**

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“ There is no thing endowed with life—from man, who is enslaving the elements, to the nimblest creature—in all this world that does not sway in its turn. Whenever action is born from force, though it be infinitesimal, the cosmic balance is upset and the universal motion results. ”

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:05:26 am**

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Tesla was critical of Einstein's relativity work, calling it:

“ ...[a] magnificent mathematical garb which fascinates, dazzles and makes people blind to the underlying errors. The theory is like a beggar clothed in purple whom ignorant people take for a king ... its exponents are brilliant men but they are metaphysicists rather than scientists ...<sup>[76]</sup> ”

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:05:49 am**

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Tesla also argued:

“ I hold that space cannot be curved, for the simple reason that it can have no properties. It might as well be said that God has properties. He has not, but only attributes and these are of our own making. Of properties we can only speak when dealing with matter filling the space. To say that in the presence of large bodies space becomes curved is equivalent to stating that something can act upon nothing. I, for one, refuse to subscribe to such a view.<sup>[77]</sup> ”

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:06:13 am**

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Tesla also believed that much of Albert Einstein's relativity theory had already been proposed by Ruder Bošković, stating in an unpublished interview:



“ ...the relativity theory, by the way, is much older than its present proponents. It was advanced over 200 years ago by my illustrious countryman Ruđer Bošković, the great philosopher, who, notwithstanding other and multifold obligations, wrote a thousand volumes of excellent literature on a vast variety of subjects. Bošković dealt with relativity, including the so-called time-space continuum ...'.[78]

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:06:45 am**

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(<http://upload.wikimedia.org/wikipedia/en/8/87/Teslathinker.jpg>)

Nikola Tesla, with Ruđer Bošković's book *Theoria Philosophiae Naturalis*, sits in front of the spiral coil of his high-frequency transformer at East Houston Street, New York.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:07:09 am**

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#### ***Directed-energy weapon***

Later in life, Tesla made remarkable claims concerning a "teleforce" weapon.[79] The press called it a "peace ray" or death ray.[80][81] In total, the components and methods included:[82][83]

- \* An apparatus for producing manifestations of energy in free air instead of in a high vacuum as in the past. This, according to Tesla in 1934, was accomplished.

- \* A mechanism for generating tremendous electrical force. This, according to Tesla, was also accomplished.

- \* A means of intensifying and amplifying the force developed by the second mechanism.

- \* A new method for producing a tremendous electrical repelling force. This would be the projector, or gun, of the invention.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:07:25 am**

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Tesla worked on plans for a directed-energy weapon from the early 1900s until his death. In 1937, Tesla composed a treatise entitled "The Art of Projecting Concentrated Non-dispersive Energy through the Natural Media" concerning charged particle beams.[84] Tesla published the document in an attempt to expound on the technical description of a "superweapon that would put an end to all war". This treatise of the particle beam is currently in the Nikola Tesla Museum archive in Belgrade. It described an open ended vacuum tube with a gas jet seal that allowed particles to exit, a method of charging particles to millions of volts, and a method of creating and directing nondispersive particle streams (through electrostatic repulsion).[85]

His records indicate that it was based on a narrow stream of atomic clusters of liquid mercury or tungsten accelerated via high voltage (by means akin to his magnifying transformer). Tesla gave the following description concerning the particle gun's operation:

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:07:43 am**

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“ [The nozzle would] send concentrated beams of particles through the free air, of such tremendous energy that they will bring down a fleet of 10,000 enemy airplanes at a distance of 200 miles from a defending nation's border and will cause armies to drop dead in their tracks.[86]

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:07:58 am**

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The weapon could be used against ground based infantry or for anti-aircraft purposes.[87]

Tesla tried to interest the US War Department in the device.[88] He also offered this invention to European countries.[89] None of the governments purchased a contract to build the device. He was unable to act on his plans.[90]

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:08:13 am**

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#### ***Theoretical inventions***

Another of Tesla's theorized inventions is commonly referred to as Tesla's Flying Machine, which appears to resemble an ion-propelled aircraft.[91] Tesla claimed that one of his life goals was to create a flying machine that would run without the use of an airplane engine, wings, ailerons, propellers, or an onboard fuel source. Initially, Tesla pondered about the idea of a flying craft that would fly using an electric motor powered by grounded base stations. As time progressed, Tesla suggested that perhaps such an aircraft could be run entirely electro-mechanically. The theorized appearance would typically take the form of a cigar or saucer.[92]

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Title: **Re: Nikola Tesla**

### ***Personal life***

Tesla was fluent in many languages. Along with Serbo-Croatian, he spoke seven other languages: Czech, English, French, German, Hungarian, Italian, and Latin.

Tesla may have suffered from obsessive-compulsive disorder.[93] and had many unusual quirks and phobias. He did things in threes, and was adamant about staying in a hotel room with a number divisible by three. Tesla was also noted to be physically revolted by jewelry, notably pearl earrings. He was fastidious about cleanliness and hygiene, and was by all accounts mysophobic.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:08:53 am**

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Tesla was obsessed with pigeons, ordering special seeds for the pigeons he fed in Central Park and even bringing some into his hotel room with him. Tesla was an animal-lover, often reflecting contentedly about a childhood cat, "The Magnificent Macak." Tesla never married. He was celibate and claimed that his chastity was very helpful to his scientific abilities.[22] Nonetheless there have been numerous accounts of women vying for Tesla's affection, even some madly in love with him. Tesla, though polite, behaved rather ambivalently to these women in the romantic sense.

Tesla was prone to alienating himself and was generally soft-spoken. However, when he did engage in a social life, many people spoke very positively and admiringly of him. Robert Underwood Johnson described him as attaining a "distinguished sweetness, sincerity, modesty, refinement, generosity, and force." His loyal secretary, Dorothy Skerrit, wrote: "his genial smile and nobility of bearing always denoted the gentlemanly characteristics that were so ingrained in his soul." Tesla's friend Hawthorne wrote that "seldom did one meet a scientist or engineer who was also a poet, a philosopher, an appreciator of fine music, a linguist, and a connoisseur of food and drink."

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:09:14 am**

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Nevertheless, Tesla displayed the occasional cruel streak; he openly expressed his disgust for overweight people, once firing a secretary because of her weight.[22]:110 He was quick to criticize others' clothing as well, on several occasions demanding a subordinate to go home and change her dress.[22]

Tesla was widely known for his great showmanship, presenting his innovations and demonstrations to the public as an artform, almost like a magician. This seems to conflict with his observed reclusiveness; Tesla was a complicated figure. He refused to hold conventions without his Tesla coil blasting electricity throughout the room, despite the audience often being terrified, though he assured them everything was perfectly safe.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:09:30 am**

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In middle age, Tesla became very close friends with Mark Twain. They spent a lot of time together in his lab and elsewhere.

Tesla remained bitter in the aftermath of his incident with Edison. The day after Edison died the New York Times contained extensive coverage of Edison's life, with the only negative opinion coming from Tesla, who was quoted as saying:

He had no hobby, cared for no sort of amusement of any kind and lived in utter disregard of the most elementary rules of hygiene ... His method was inefficient in the extreme, for an immense ground had to be covered to get anything at all unless blind chance intervened and, at first, I was almost a sorry witness of his doings, knowing that just a little theory and calculation would have saved him 90 percent of the labor. But he had a veritable contempt for book learning and mathematical knowledge, trusting himself entirely to his inventor's instinct and practical American sense.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:09:54 am**

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Shortly before he died, Edison said that his biggest mistake had been in trying to develop direct current, rather than the vastly superior alternating current system that Tesla had put within his grasp.[12]:19

Tesla was good friends with Robert Underwood Johnson. He had amicable relations with Francis Marion Crawford, Stanford White, Fritz Lowenstein, George Scherff, and Kenneth Swezey. He ripped up a Westinghouse contract that would have made him the world's first billionaire, in part because of the implications it would have on his future vision of free power, and in part because it would run Westinghouse out of business, and Tesla had no desire to deal with the creditors.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:10:15 am**

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Tesla lived the last ten years of his life in a two-room suite on the 33rd floor of the Hotel New Yorker, room 3327. There, near the end of his life, Tesla showed signs of encroaching mental illness, claiming to be visited by a specific white pigeon daily. Several biographers note that Tesla viewed the death of the pigeon as a "final blow" to himself and his work.

Tesla believed that war could not be avoided until the cause for its recurrence was removed, but was opposed to wars in general.[94] He sought to reduce distance, such as in communication for better understanding, transportation, and transmission of energy, as a means to ensure friendly international relations.[95]

Like many of his era, Tesla, a life-long bachelor, became a proponent of a self-imposed selective breeding version of eugenics. In a 1937 interview, he stated:

... man's new sense of pity began to interfere with the ruthless workings of nature. The only method compatible with our notions of civilization and the race is to prevent the breeding of the unfit by sterilization and the deliberate guidance of the mating instinct .... The trend of opinion among eugenists is that we must make

marriage more difficult. Certainly no one who is not a desirable parent should be permitted to produce progeny. A century from now it will no more occur to a normal person to mate with a person eugenically unfit than to marry a habitual criminal.[96]

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Title: **Re: Nikola Tesla**  
Post by: **Lynn Rotanno** on **June 28, 2009, 03:10:33 am**

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In 1926, Tesla commented on the ills of the social subservience of women and the struggle of women toward gender equality, indicated that humanity's future would be run by "Queen Bees". He believed that women would become the dominant sex in the future.[97]

In his later years Tesla became a vegetarian. In an article for Century Illustrated Magazine he wrote: "It is certainly preferable to raise vegetables, and I think, therefore, that vegetarianism is a commendable departure from the established barbarous habit." Tesla argued that it is wrong to eat uneconomic meat when large numbers of people are starving; he also believed that plant food was "superior to it [meat] in regard to both mechanical and mental performance". He also argued that animal slaughter was "wanton and cruel".[98]

In his final years he suffered from extreme sensitivity to light, sound and other influences.[99]

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Title: **Re: Nikola Tesla**  
Post by: **Lynn Rotanno** on **June 28, 2009, 03:11:52 am**

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([http://upload.wikimedia.org/wikipedia/en/thumb/9/9e/Twain\\_in\\_Tesla%27s\\_Lab.jpg/475px-Twain\\_in\\_Tesla%27s\\_Lab.jpg](http://upload.wikimedia.org/wikipedia/en/thumb/9/9e/Twain_in_Tesla%27s_Lab.jpg/475px-Twain_in_Tesla%27s_Lab.jpg))

Mark Twain in Tesla's lab, spring 1894

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Title: **Re: Nikola Tesla**  
Post by: **Lynn Rotanno** on **June 28, 2009, 03:12:33 am**

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### ***Death***

Tesla died of heart failure alone in room 3327 of the New Yorker Hotel, some time between the evening of 5 January and the morning of 8 January 1943, at the age of 86.[100] Despite having sold his AC electricity patents, Tesla was destitute and died with significant debts. Later that year the US Supreme Court upheld Tesla's patent number,[101] in effect recognizing him as the inventor of radio.

Immediately after Tesla's death became known, the government's Alien Property Custodian office took possession of his papers and property, despite his US citizenship. His safe at the hotel was also opened. At the time of his death, Tesla had been continuing his work on the teleforce weapon, or death ray, that he had unsuccessfully marketed to the US War Department. It appears that his proposed death ray was related to his research into ball lightning and plasma, and was imagined as a particle beam weapon. The US government did not find a prototype of the device in the safe. After the FBI was contacted by the War Department, his papers were declared to be top secret. The personal effects were seized on the advice of presidential advisers; J. Edgar Hoover declared the case most secret, because of the nature of Tesla's inventions and patents.[102] One document stated that "[he] is reported to have some 80 trunks in different places containing transcripts and plans having to do with his experiments [...]".

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Title: **Re: Nikola Tesla**  
Post by: **Lynn Rotanno** on **June 28, 2009, 03:12:58 am**

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Tesla's family and the Yugoslav embassy struggled with the American authorities to gain these items after his death due to the potential significance of some of his research. Eventually, his nephew, Sava Kosanović, won possession of some of his personal effects, which are now housed in the Nikola Tesla Museum.[103] Tesla's funeral took place on 12 January 1943, at the Cathedral of Saint John the Divine in Manhattan, New York City. His body was cremated and his ashes taken to Belgrade, Yugoslavia in 1957. The urn was placed in the Nikola Tesla Museum, where it resides to this day.

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Title: **Re: Nikola Tesla**  
Post by: **Lynn Rotanno** on **June 28, 2009, 03:13:44 am**

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([http://upload.wikimedia.org/wikipedia/en/9/9f/Teslabust\\_adjusted.jpg](http://upload.wikimedia.org/wikipedia/en/9/9f/Teslabust_adjusted.jpg))

Bust of Tesla by Ivan Meštrović, 1952, in Zagreb, Croatia

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Title: **Re: Nikola Tesla**  
Post by: **Lynn Rotanno** on **June 28, 2009, 03:31:01 am**

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### ***Tesla's pigeon***

According to John J. O'Neill, author of Prodigal Genius, the Life of Nikola Tesla, Tesla told him this story in the presence of William L. Laurence, the New York Times science writer.

Tesla had been feeding pigeons for years. Among them, there was a very beautiful female white pigeon with light gray tips on its wings that seemed to follow him everywhere. A great deal of rapport developed between them. As Tesla confessed, he loved that pigeon: "Yes, I loved that pigeon, I loved her as a man loves a woman, and she loved me." If the pigeon became ill, he would nurse her back to health and as long as she needed him and he could have her, nothing else mattered and there was purpose in his life.

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Title: **Re: Nikola Tesla**  
Post by: **Lynn Rotanno** on **June 28, 2009, 03:31:22 am**

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One night as he was lying in bed, she flew in through the window and he knew right away that she had something important to tell him: she was dying. "And then, as I got her message, there came a light from her eyes - powerful beams of light". "...Yes," "...it was a real light, a powerful, dazzling, blinding light, a light more intense than I had ever produced by the most powerful lamps in my laboratory."

Tesla admitted to O'Neill that when that particular pigeon died, something went out of his life. Before that time, he could complete the most ambitious programs he could ever dream of but after the pigeon flew into the beyond, he knew his life's work was done for good.[104]

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:33:04 am**

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### *Legacy and honors*

He did not like posing for portraits, doing so only once for princess Vilma Lwoff-Parlaghy.[105] His wish was to have a sculpture made by his close friend, Croatian sculptor Ivan Meštrović, who was at that time in United States, but he died before getting a chance to see it. Meštrović made a bronze bust (1952) that is held in the Nikola Tesla Museum in Belgrade and a statue (1955/56) placed at the Ruder Bošković Institute in Zagreb. This statue was moved to Nikola Tesla Street in Zagreb's city centre on the 150th anniversary of Tesla's birth, with the Ruder Bošković Institute to receive a duplicate. In 1976, a bronze statue of Tesla was placed at Niagara Falls, New York. A similar statue was also erected in his hometown of Gospić in 1986.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:33:19 am**

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The SI unit tesla (T) for measuring magnetic flux density or magnetic induction (commonly known as the magnetic field B) was named in Tesla's honor at the Conférence Générale des Poids et Mesures, Paris in 1960. The Institute of Electrical and Electronics Engineers (IEEE) of which Tesla had been vice president also created an award in recognition of Tesla. Called the IEEE Nikola Tesla Award, it is given to individuals or a team that has made outstanding contributions to the generation or utilization of electric power, and is considered the most prestigious award in the area of electric power.[106] The crater Tesla on the far side of the Moon and the minor planet 2244 Tesla are also named after him.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:33:42 am**

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Tesla was featured on several Yugoslav- and Serbian dinar notes and coinage. The largest power plant complex in Serbia, the TPP Nikola Tesla is named in his honor. On 10 July 2006 the biggest airport in Serbia was renamed Belgrade Nikola Tesla Airport in honor of Tesla's 150th birthday.

The company, Tesla was a large, state-owned electrotechnical conglomerate in the former Czechoslovakia. It was renamed in Tesla's honor from the previous Electra on 7 March 1946. Some of its subsidiaries still trade in the Czech Republic.

An electric car company, Tesla Motors, named their company in tribute to Tesla. Their website states: The namesake of our Tesla Roadster is the genius Nikola Tesla [...] We're confident that if he were alive today, Nikola Tesla would look over our car and nod his head with both understanding and approval.[107]

The Croatian subsidiary of Ericsson is also named 'Ericsson Nikola Tesla d.d'. ('Nikola Tesla' was a phone hardware company in Zagreb before Ericsson bought it in the 1990s) in honor of Tesla's pioneering work in wireless communication.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:33:56 am**

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The year 2006 was celebrated by UNESCO as the 150th anniversary of the birth of Nikola Tesla, scientist, as well as being proclaimed by the governments of Croatia and Serbia to be the Year of Tesla. On this anniversary, 10 July 2006, the renovated village of Smiljan (which had been demolished during the wars of the 1990s) was opened to the public along with Tesla's house (as a memorial museum) and a new multimedia center dedicated to the life and work of Tesla. The parochial church of St. Peter and Paul, where Tesla's father had held services, was renovated as well. The museum and multimedia center are filled with replicas of Tesla's work. The museum has collected almost all of the papers ever published by, and about, Tesla; most of these provided by Ljubo Vujovic from the Tesla Memorial Society in New York. Alongside Tesla's house, a monument created by sculptor Mile Blazevic has been erected. In the nearby city of Gospić, on the same date as the reopening of the renovated village and museums, a higher education school named Nikola Tesla was opened, and a replica of the statue of Tesla made by Frano Krsinic (the original is in Belgrade) was presented.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:34:15 am**

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The song "Tesla's Hotel Room" by the Handsome Family, on their 2006 album Last Days of Wonder, is a fictionalized account of Tesla's later years at the New Yorker hotel.

The heavy metal group Tesla, which made famous the rock-ballad "Love Song", was named after Nikola Tesla, and their website provides a link to Nikola Tesla's webpage.

The famous Serbian composer-singer Zeljko Joksimovic composed in 2006 the instrumental song "Nikola Tesla", vocals by Jelena Tomasevic for a documentary film on Radio Television of Serbia. This song was released in 2008 at the Balkan ethnic collection "Balkan Routes Vol. 01: Nikola Tesla" which is dedicated to Tesla.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:34:26 am**

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In the years since his death, many of his innovations, theories and claims have been used, at times unsuitably and controversially, to support various fringe theories that are regarded as unscientific. Most of Tesla's own work conformed with the principles and methods accepted by science, but his extravagant personality and sometimes unrealistic claims, combined with his unquestionable genius, have made him a popular figure among fringe theorists and believers in conspiracies about "hidden knowledge". Even in Tesla's time, some believed that he was actually an angelic being from Venus sent to Earth to reveal scientific knowledge to humanity.[22] This belief is maintained in present times by followers of Nuwaubianism.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:35:12 am**

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([http://upload.wikimedia.org/wikipedia/commons/thumb/a/a2/Tesla\\_statue\\_at\\_niagara\\_falls.jpg/565px-Tesla\\_statue\\_at\\_niagara\\_falls.jpg](http://upload.wikimedia.org/wikipedia/commons/thumb/a/a2/Tesla_statue_at_niagara_falls.jpg/565px-Tesla_statue_at_niagara_falls.jpg))

Statue of Nikola Tesla in Niagara Falls State Park on Goat Island, New York.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:35:57 am**

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([http://upload.wikimedia.org/wikipedia/en/c/cf/20CSD\\_Coin\\_Tesla.jpg](http://upload.wikimedia.org/wikipedia/en/c/cf/20CSD_Coin_Tesla.jpg))

20 Serbian dinar coin minted in 2006

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:36:24 am**

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### ***Monuments***

A monument to Tesla was established at Niagara Falls, New York, USA. This monument is a copy of a monument standing in front of the Belgrade University Faculty of Electrical Engineering. Another monument to Tesla, featuring him standing on a portion of an alternator, was established at Queen Victoria Park in Niagara Falls, Ontario, Canada.[108] The monument was officially unveiled on Sunday, 9 July 2006 on the 150th anniversary of Tesla's birth. The monument was sponsored by St. George Serbian Church, Niagara Falls, and designed by Les Drysdale of Hamilton, Ontario. Mr. Drysdale's design was the winning design from an international competition. Tesla's most famous statue is the one erected on 23 May 1879 at Sycamore Peak showing him and Dr. Brian S. Whitecross. Belgrade International Airport is called "Belgrade Nikola Tesla Airport".[109]

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:36:54 am**

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### ***Portrayals in popular culture***

Nikola Tesla has appeared in popular culture as a character in books, films, radio, TV, Music, live theatre, comics and video games. The lack of recognition received by Tesla during his own lifetime has made him a tragic and inspirational character well suited to dramatic fiction. Tesla has particularly been seen in science fiction where his inventions are well suited. The impact of the technologies invented by Nikola Tesla is a recurring theme in several types of science-fiction.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:37:30 am**

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Nikola Tesla, inventor and engineer, has appeared in popular culture as a character in books, films, comics and video games. The lack of recognition received by Tesla during his own lifetime has made him a tragic and inspirational character well suited to dramatic fiction. Tesla has particularly been seen in science fiction where his inventions are well suited. The impact of the technologies invented by Nikola Tesla are a recurring theme in the steampunk genre of alternate technology science-fiction.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:37:41 am**

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Tesla's achievements and personality have inspired many authors to include him as character in their works or create characters inspired by him.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:38:03 am**

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### ***Books and comics***

- \* In the America's Best Comics title Tom Strong, the titular character's daughter Tesla Strong is named after the scientist.
- \* To Mars With Tesla; or, the Mystery of the Hidden World by J. Weldon Cobb (1901) is an adventure where Tesla, aided by Young Edison (Thomas Edison's fictional nephew) and a couple of scientists, has a number of encounters with fake Martians.
- \* Tesla is mentioned in H.G. Wells' 1901 book The First Men in the Moon as being the inspiration to the character of Julius Wendigee, who picks up the broadcasts of the main character's exploits on the Moon.
- \* Some researchers have suggested that the character of Nyarlathotep in H P Lovecraft's 1920 short story of the same name was inspired by Tesla. [1]
- \* An immortalized version of Nikola Tesla is a recurring character in Spider Robinson's Callahan's book series (1977-2004).
- \* Tesla appears in the 1989 novel Moon Palace by Paul Auster.
- \* Tesla, alongside Professor Challenger, plays a major role in Ralph Vaughan's four Sherlock Holmes/H. P. Lovecraft crossovers, The Adventure of the Ancient Gods (1990) The Adventure of the Dreaming Detective (1992), "The Adventure of the Laughing Moonbeast" (1992) and Sherlock Holmes and the Terror Out of Time (2001). [2][3]
- \* Generation Tesla (1995), published in Serbia. Tesla evades his own death by transferring himself to another plane of existence. In

2020 he resurrects a number of humans slain by the evil Kobalt, transforming them into superhumans who can counter the threats of such villains. He is founder and mentor of super-hero team Generation Tesla.[4]

\* Broadcast power, Tesla's main focus in his later years, is the primary plot device of F. Paul Wilson's novel *Legacies*, and a fictional device credited to him figures prominently in *Conspiracies* (1999), part of the Repairman Jack series of novels.

\* *JLA: Age of Wonder* (2003) is a two-issue mini-series from DC Comics' Elseworlds line, in which Superman lands in Kansas in the 1850s and emerges on the world stage at the 1876 Centennial Exposition. He teams up with Edison but ends up working with Tesla, who eventually deploys a death ray during World War I. [5]

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:38:19 am**

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\* *Barnum!*: In *Secret Service to the USA*, (2003) by Howard Chaykin and David Tischman, shows P. T. Barnum battling Tesla's sinister plans.

\* In the book *The Witches of Chiswick* (2003) Nikola Tesla (in an alternate timeline) meets Charles Babbage and creates wireless energy and steampunk supercomputers.

\* In *Wonder of the Worlds* a novel by geomorphologist and author Sesh Heri published in 2005 by Lost Continent Library, Tesla journeys to Mars with Mark Twain and Harry Houdini to retrieve a stolen crystal and confront Kel, the emperor of the Red Planet, on the eve of the Martian invasion of Earth.

\* In *The Five Fists of Science* (2006) a graphic novel by Matt Fraction and Steven Sanders, Tesla teams up with Mark Twain to battle Thomas Edison.

\* Tesla is briefly mentioned in Book 2 of *Southland Tales* (2006) in which a large group of neo-Marxists achieve his dream of wireless electricity. An outdated version of the Wikipedia article on Tesla is also featured at the end of the book.

\* Brian Clevinger's *Atomic Robo* [6] is a fictional work about a robot that was invented by Nikola Tesla.

\* Tesla is one of the main characters in *The Tesla Legacy*, a novel by Australian author Robert G. Barrett (2006). [7] In the novel, Tesla builds a 'doomsday machine' hidden in the New South Wales area of Hunter Valley that could disrupt all wireless communication on Earth.

\* Tesla has a major role in Thomas Pynchon's novel *Against the Day* (2006).

\* Tesla appears in the webcomic *Thinkin' Lincoln* [8] by Miles Grover.

\* An improvised Tesla machine, as well as a few Tesla references, are used in Jack Henderson's novel *Circumference of Darkness*.

\* Cory Doctorow's short story collection *A Place So Foreign and Eight More* includes the short story "Home Again, Home Again" where a main character believes that he is possessed by the spirit of Tesla.

\* Tesla is one of the major characters of Jacek Dukaj's novel *Ice*.

\* In the *Area 51* novels Tesla is said to have used his Death Ray to knock down a hostile alien space craft.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:38:40 am**

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\*

\* *The Invention of Everything Else*, by Samantha Hunt (2008), is a novel blending fact with fiction. It centers on the relationship between Nikola Tesla and a maid at the New Yorker Hotel.

\* Tesla appears in the comic book *The Light and Darkness War* where he is an outlaw in the afterlife world of the galaxy of Light and his machines forbidden by Leonardo Da Vinci.

\* In the alternate history setting of Alan Moore's *The League of Extraordinary Gentlemen, Volume I*, Tesla and Edison never became enemies, instead remaining partners and developing some of the advanced technology of the League world.

\* Tesla had an appearance in the denouement of Jack Du Brul's 2006 novel *Havoc*.

\* In her book, *Addition*, Toni Jordan's main character, Grace, keeps a photo of her hero Nikola Tesla by her bed.

\* In the manga *Bleach*, the Espada Nnoitra Jiruga's fracción, Tesla, is named after the scientist

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:39:02 am**

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### ***Film, radio and TV***

\* In 1941 the first of Max Fleischer's Superman cartoons depicted Superman fighting a mad scientist named Tesla. They are now in the public domain and can be viewed in various locations, including the Internet Archive. [9]

\* *Nikola Tesla* (1977), Yugoslav TV series about the life of Nikola Tesla, in 10 episodes. Tesla was played by Rade Šerbedžija.[10]

\* *Tajna Nikole Tesle* (aka *Tesla*, *The Secret Life of Nikola Tesla*, *The Secret of Nikola Tesla*) (1980) a Croatian movie directed by Krsto Papić, notable for its inclusion of Orson Welles as banking baron J.P. Morgan, touches on Tesla's psychic powers and lost vision of the future. [11]

\* In the broadcast radio series *Ruby the Galactic Gumshoe*, by the ZBS Foundation, Nikola Tesla is hailed as the patron saint of the Digital Circus.

\* In *Hot Wheels Highway 35 World Race* (2003) Dr. Tesla discovers inter-dimensional racetracks named Highway 35. [12]

\* An amusement park is named after Nikola Tesla in the Saturday morning cartoon series *The Weekenders*, when it briefly mentions the debate over credit for inventing radio.

\* On the Steven Spielberg cartoon *Histeria!*, Nikola Tesla is featured in an animated piece where he looks and sounds like Christopher Walken.

\* In Craig Baldwin's agitprop film *Spectres of the Spectrum* (1999), a group of media revolutionaries broadcast underground transmissions under the moniker "TV Tesla." The film also interpolates Tesla's story into its plot.

\* Nikola Tesla's work is referred to in the sketch "Jack Shows Meg His Tesla Coil", featuring Jack White and Meg White of The White Stripes, from Jim Jarmusch's 2003 film *Coffee and Cigarettes*. The White Stripes had previously mentioned Tesla in their song "Astro" on their self-titled first album.

\* Tesla is an important supporting character in Christopher Nolan's 2006 film *The Prestige*, portrayed by David Bowie. In the film, he builds a machine for use in the stage act of magician Robert Angier (Hugh Jackman).

\* On the NBC series *Studio 60 on the Sunset Strip* (2006), Matt Albie and Danny Tripp plan to make a film about the life of Nikola Tesla. However, they are unable to make the movie because Danny tests positive for \*\*\*\* and could not clear the insurance.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:39:15 am**

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\*

\* In the film, *Tucker: The Man and His Dream*, there is a painting/mural of Tesla shown at least twice during the Tucker trial. [13]

\* On the series *House* Episode 2 season 4 : "Tesla was robbed" is written on the board.

\* Tesla was a crucial character in the pilot episode, *Power*, of *Murdoch Mysteries*.

\* The background of the character Janos Bartok in the TV series *Legend* was heavily inspired by Tesla. The picture of Tesla sitting and reading underneath the Magnifying Transmitter was portrayed in the first episode.

\* A cartoon version of Tesla is alluded to in the *Astrobase Go* [adult swim] cartoon *The Venture Bros.*, in an episode called "ORB". In this depiction, Tesla and the Avon Ladies attack the airship of "The Guild", precursor of the shows antagonists group Guild of Calamitous Intent, with a lighting gun, the "peace ray" that Tesla talked about making later in his life.

\* In Sci Fi Channel's *EUREKA*, Eureka's Community School is called Tesla School. The school's mascot is the Coils.

\* In the Sci Fi Channel series *Sanctuary*, a fictional version of Tesla is revealed to have been transformed into a vampire as a result of a scientific experiment. He also appears to be one of the primary antagonist of the series' first season. He is played by actor Jonathon Young.

\* In episode #11 ("Die Hindenburg") of the German radio play series *Offenbarung 23*, which deals with conspiracy theories, Tesla, the circumstances of his death and his work with "death ray" weapons play a role.

\* The Firesign Theatre list Nikola Tesla in a list of extinct species and lost things in one of their radio sketches on *Dear Friends*.

\* In the animated series *The Weekenders* there is a theme park named after Tesla.

\* In the Disney animated film *Meet the Robinsons*, a picture of Tesla hangs in Lewis' room in the orphanage. Later, in the future sequences, some Tesla coil like devices are among the inventions kept in the lab of Lewis' future self.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:39:39 am**

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### ***Music***

\* Laurie Anderson makes several references to Tesla in her works, particularly on *United States Live I-IV* (1983).

\* *Orchestral Manoeuvres in the Dark* included a song titled "Tesla Girls" on their album *Junk Culture* (1984).

\* The rock band *Tesla* is named after him. They referenced his life and works a number of times, such as in the song "Edison's Medicine" (and accompanying music video, from the 1991 album *Psychotic Supper*) and the album *The Great Radio Controversy* (1989).

\* Guitar group *Acoustic Alchemy*'s 1998 album *Positive Thinking...* uses a colored version of the photograph of the "Magnifying Transmitter" taken at Tesla's Colorado Springs laboratory c1900 for the album cover.

\* Australian Composer Constantine Koukias wrote his two-act opera *Tesla - Lightning in His Hand* about the life and times of Nikola Tesla. It premiered at the 10 Days on the Island Festival in Hobart, Tasmania, in 2003.

\* Recent performances of "National Grid" and "Circuit Blasting" by *Disinformation vs Strange Attractor* - see *Disinformation* (art and music project), use small Tesla coils as live performance tools (aka "instruments") for sound art and electronic music. Earlier versions of "National Grid" by *Disinformation* (solo) use amplified VLF radio noise from AC electricity and line-outputs from AC mains transformers as

the basis of sound-art installations and live music performances.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:39:53 am**

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- \*
  - \* Joy Electric's 2004 album Hello, Mannequin contains a song that shares Tesla's name, in which singer Ronnie Martin laments, "Genius, scientist, inventor / Penniless at death, yet ignored / Nikola Tesla / Who remembers?".
  - \* Nerdcore hip hop artist Jaylyn Coffin, references Tesla and his work numerous times in her song "Mad Science".
  - \* The Handsome Family features Tesla in the song "Tesla's Hotel Room". The song is featured on the album Last Days of Wonder.
  - \* The White Stripes song "Astro" mentions Tesla in the line "Maybe Tesla does the Astro".
  - \* Grindcore band Discordance Axis have a song on their Jouhou album titled "Nikola Tesla". The track is an experiment in extreme harsh electrical noise, perhaps the sort of music Nikola would have made.
  - \* Punk band Disarm reference Tesla in the song "Sirens & Machines" in the line, "Hey baby what's your malfunction? I got my body from Nikola Tesla".
  - \* Hard 'n Phirm's song "Trace Elements" includes the line "Tesla's coil thangs".
  - \* The rock band Piebald refer to him in their song "A Friend of Mine".
  - \* The CD "Balkan Routes Vol. 01: Nikola Tesla"(released 2008), is a collection of 15 songs with a contemporary Balkan sound dedicated to Nikola Tesla. The Serbian composer-singer Zeljko Joksimovic wrote the music for Nikola Tesla (instrumental), vocals by Jelena Tomasevic.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:40:11 am**

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### ***Video games***

Tesla's proposal of teleforce weapons and the destructive possibilities of massive electric arcs created by tesla coils have inspired many video game designers to create Tesla weapons and armors.

- \* The Tesla Gun in the computer game Return to Castle Wolfenstein is a weapon that projects lightning-like electrical arcs, as part of the secret Nazi-Germany weapons that the main character, private Blaskowitz finds through the game.
- \* The Tesla Cannon in the computer game Blood and its sequel Blood II: The Chosen; it fires bursts of electrical energy, and can also be charged to release a devastating lightning blast.
- \* In the Command & Conquer Red Alert series of video games, Nikola Tesla is a scientist working for the USSR, and "Tesla" is the name of the technology the Soviets use to generate power and for their lightning-based weapons. Perhaps the most widely known example is the Tesla Coil defense structure, capable of sending short electric arcs towards oncoming units, also in their arsenal are Tesla troopers, who carry portable tesla coil based weaponry and tesla tanks, which have a large glowing blue sphere that ejects great bolts of electricity.
- \* Quake II Mission Pack: Ground Zero has landmines called Tesla that can be set on the ground, and enemies nearby get attacked by electric discharges.
- \* Two weapons in the Ratchet & Clank video game series, the Tesla Claw and Tesla Barrier (the upgraded version of the Shield Charger), use electricity discharges to attack enemies.
- \* In Tomb Raider: Legend, Lara Croft has to investigate a research facility in Kazakhstan in order to uncover an ancient artifact which is powering the plant's main weapons array. The technology is supposedly based on Tesla's work.
- \* Nikola Tesla is also one of the characters in the game Martian Dreams, by Origin, which is part of the Worlds of Ultima series.
- \* Nikola Tesla is mentioned in several accounts throughout the world of Crimson Skies.
- \* In the Destroy All Humans series, Tesla coils are used to shoot waves of electricity that disrupts the player's powers.
- \* In the popular Massive Multi-player Online Roleplaying Game (MMORPG) City of Heroes, the hero class Blaster has an ability under its power set "Electrical Blast" called Tesla Cage, in which the player creates a cage of electricity to surround an enemy and shock him.
- \* The Tesla Armor in the Fallout series of computer games has high resistance to laser and plasma weapons. Also, there is a book within the game entitled Nikola Tesla and You, which raises the player's Energy Weapons skill. In "Fallout 3" Tesla armor is some of the strongest armor in the game and is designed with Tesla Coils and a field of electricity around the character.
- \* The Fallout 3 downloadable content Broken Steel features a weapon called the Tesla Cannon. Building the cannon requires you to find a Tesla Coil in an old power station.
- \* The Tesla Coil in the game "Goblin Commander: Unleash the Horde" shoots lightning bolts at approaching enemies.
- \* In the MMORPG Asheron's Call the most powerful lightning bolt spell is named "Alset's Coil", which is merely Tesla backwards.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:40:31 am**

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- #
  - # In the Xbox game Crimson Skies: High Road to Revenge, one of the planes is equipped with a Tesla Gun, which shoots an arc of energy at other planes.
  - # Troika Games' Arcanum: Of Steamworks and Magick Obscura includes a Tesla Rod as the most technologically-advanced pure electrical weapon achievable in-game.
  - # In Super Robot Taisen: Original Generation and Super Robot Taisen: Original Generation 2, the Tesla Drive is an enhanced engine which makes personal troopers flight capable.
  - # In the webgames Strategy Defense 3 and Strategy Defense 4, the Tesla Cannon, Tesla Helicopter, and Tesla Tower are powerful assets that can be purchased.
  - # Nikolaj Taslow in ParaWorld seems to have been based on Tesla.
  - # In the WiiWare game "Gyrostar" a weapon that can be obtained is called the "Tesla Shot". It appears to be a ball of electricity.
  - # In the FPS Tremulous, the Tesla Turret is a human construction which arcs electricity to nearby aliens.



# In the Playstation 2 game Persona 4, there is an item dubbed the "Tesla Coil" which deals 50 points of Electrical damage to foes.  
# In the MMORPG Guild Wars, there is an NPC named Tesla.  
# In the recently released PSN game "Zen Pinball", there is a table called 'Tesla', involving experiments which act as the table goals and various features relating to electricity.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:40:49 am**

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#### ***Role-playing games***

\* One of the fictional settings books for the RPG GURPS, GURPS Alternate Earths, presents six different versions of Earth had history gone in different ways to that of our world. One of them, called "Gernsback" (after editor Hugo Gernsback) has its Point Of Divergence in the marriage of Nikola Tesla to Anne Morgan, daughter of banker and financier J. P. Morgan. This marriage stabilizes him psychologically and economically and allows him to invent, among other things, wireless energy.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:41:06 am**

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#### ***Live Theatre***

A number of live theatrical plays based on Tesla's life have been produced and staged worldwide.

\* The Canadian theatrical company Electric Company Theatre took its stage production Brilliant! The Blinding Enlightenment of Nikola Tesla on tour first starting in 1996. In August 2007, their production was again listed on their current performance schedule.

\* The Austin, Texas based theatrical collective Rude Mechanicals created and then produced Kirk Lynn's Requiem For Tesla in January/Feb of 2001, and then presented again at the Fresh Terrain Festival in February 2003

\* Duncan Pflaster's play Sleeping in Tomorrow takes place in several alternative universes, one of which is a universe where Tesla's ideas were celebrated and implemented.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:42:11 am**

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#### ***Honorific portrayals on banknotes***

([http://upload.wikimedia.org/wikipedia/commons/thumb/d/df/Serbian\\_500din\\_Tesla\\_1978-a\\_king.jpg/800px-Serbian\\_500din\\_Tesla\\_1978-a\\_king.jpg](http://upload.wikimedia.org/wikipedia/commons/thumb/d/df/Serbian_500din_Tesla_1978-a_king.jpg/800px-Serbian_500din_Tesla_1978-a_king.jpg))

500 Yugoslav dinars (1978). HF transformer coil in the background

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:44:28 am**

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([http://upload.wikimedia.org/wikipedia/commons/thumb/b/b3/Serbia\\_1000din\\_Tesla\\_1992-a\\_king.jpg/800px-Serbia\\_1000din\\_Tesla\\_1992-a\\_king.jpg](http://upload.wikimedia.org/wikipedia/commons/thumb/b/b3/Serbia_1000din_Tesla_1992-a_king.jpg/800px-Serbia_1000din_Tesla_1992-a_king.jpg))

1,000 Yugoslav dinars (1992)

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:53:40 am**

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([http://upload.wikimedia.org/wikipedia/commons/thumb/f/f8/Serbia\\_10mlrd\\_Tesla\\_1993-a\\_king.jpg/800px-Serbia\\_10mlrd\\_Tesla\\_1993-a\\_king.jpg](http://upload.wikimedia.org/wikipedia/commons/thumb/f/f8/Serbia_10mlrd_Tesla_1993-a_king.jpg/800px-Serbia_10mlrd_Tesla_1993-a_king.jpg))

10,000,000,000 Yugoslav dinars (1993)

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:54:28 am**

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([http://upload.wikimedia.org/wikipedia/commons/thumb/5/51/Serbia\\_5din\\_Tesla\\_1994-a\\_king.jpg/800px-Serbia\\_5din\\_Tesla\\_1994-a\\_king.jpg](http://upload.wikimedia.org/wikipedia/commons/thumb/5/51/Serbia_5din_Tesla_1994-a_king.jpg/800px-Serbia_5din_Tesla_1994-a_king.jpg))

5 new Yugoslav dinars (1994)

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:55:12 am**

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(<http://upload.wikimedia.org/wikipedia/commons/thumb/0/0e/Tesla.jpg/800px-Tesla.jpg>)

100 Serbian dinars (2007)

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 03:57:09 am**

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(<http://upload.wikimedia.org/wikipedia/en/c/c2/NikolaTeslaLightbulb.jpg>)

Nikola Tesla with his invention, a wireless lightbulb powered by the electric field surrounding it.

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Title: **Re: Nikola Tesla**  
Post by: **Lynn Rotanno** on **June 28, 2009, 03:57:42 am**

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### ***List of Tesla patents***

Below is a list of Tesla patents. Dr. Nikola Tesla was an inventor who obtained around 300 patents[1] worldwide for his inventions. Some of Dr. Tesla's patents are not accounted for, and various sources have discovered some that have lain hidden in patent archives. There are a minimum of 278 patents[1] issued to Dr. Tesla in 26 countries that have been accounted for. Many of Dr. Tesla's patents were in the United States, Britain, and Canada, but many other patents were approved in countries around the globe. Many inventions developed by Dr. Tesla were not put into patent protection[2].

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Title: **Re: Nikola Tesla**  
Post by: **Lynn Rotanno** on **June 28, 2009, 03:58:14 am**

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### ***Introduction***

Dr. Tesla's inventions and developments include the AC motor, the bifilar coil, various devices that use rotating magnetic fields, the alternating current polyphase power distribution system, the fundamental devices of systems of wireless communication (legal priority for the invention of radio), radio frequency oscillators, devices for voltage magnification by standing waves, robotics, logic gates for secure radio frequency communications, devices for x-rays, apparatus for ozone generation [3], devices for ionized gases, devices for high field emission, devices for charged particle beams, methods for providing extremely low level of resistance to the passage of electrical current, [4] means for increasing the intensity of electrical oscillations, voltage multiplication circuitry, devices for high voltage discharges, devices for lightning protection, the bladeless turbine, and VTOL aircraft.

Recent references to Dr. Tesla's patents include US5548819 (Method and apparatus for communication of information), US5908444 (Complex frequency pulsed electromagnetic generator and method of use), US4869598 (Temperature-sensitive multiple-layer thin film superconducting device), and US6104107 (Method and apparatus for single line electrical transmission).

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Title: **Re: Nikola Tesla**  
Post by: **Lynn Rotanno** on **June 28, 2009, 03:58:52 am**

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(<http://upload.wikimedia.org/wikipedia/commons/0/09/TeslaTurbineOriginal.png>)

The "Bladeless" turbine design, Tesla's 100th American patent.

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Title: **Re: Nikola Tesla**  
Post by: **Lynn Rotanno** on **June 28, 2009, 03:59:24 am**

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### ***American***

\* patent number - name of patent - date - notes on patent  
First fifty patents

(<http://upload.wikimedia.org/wikipedia/commons/2/23/454622.png>)

**454622 - System of Electric Lighting:** Apparatus devised for the purpose of converting and supplying electrical energy in a form suited for the production of certain novel electrical phenomena; Used later as a practical RF power supply.

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Title: **Re: Nikola Tesla**  
Post by: **Lynn Rotanno** on **June 28, 2009, 04:00:54 am**

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### ***First fifty patents***

1. U.S. Patent 0,334,823 - Commutator for Dynamo Electric Machines - 1886 January 26 - Elements to prevent sparking on dynamo-electric machines; Drum-style with brushes.
2. U.S. Patent 0,350,954 - Regulator for Dynamo Electric Machines - 1886 October 19 - Automatic regulation of energy levels; Mechanical device to shift brushes.
3. U.S. Patent 0,335,786 - Electric Arc lamp - 1886 February 9 - Arc lamp with carbon electrodes controlled by electromagnets or solenoids and a clutch mechanism; Corrects earlier design flaws common to the industry.
4. U.S. Patent 0,335,787 - Electric arc lamp - 1886 February 9 - Arc lamp's automatic fail switch when arc possesses abnormal behavior; Automatic reactivation.
5. U.S. Patent 0,336,961 - Regulator for dynamo electric machines - 1886 March 2 - Two main brushes connected to helices coil ends; Intermediate point branch shunt connection for third brush.
6. U.S. Patent 0,336,962 - Regulator for Dynamo Electric Machines - 1886 March 2 - Auxiliary brush[es] shunting a portion or whole of the field helices coil; Regulates energy flow; Adjustable level of current.
7. U.S. Patent 0,359,748 - Dynamo electric machine - 1887 March 22 - Improve construction; Facilitate easier construction; Reduce the cost; Magnetic frame; Armature; Alternating current synchronous motor.  
381968 - Electro magnetic motor
8. U.S. Patent 0,381,968 - Electro magnetic motor - 1888 May 1 - Mode and plan of operating electric motors by progressive shifting; Field Magnet; Armature; Electrical conversion; Economical; Transmission of energy; Simple construction; Easier construction; Rotating magnetic field principles.
9. U.S. Patent 0,381,969 - Electro Magnetic Motor - 1888 May 1 - Novel form and operating mode; Coils forming independent energizing circuits; Connected to an alternating current generator; Synchronous motor.
10. U.S. Patent 0,381,970 - System of Electrical Distribution - 1888 May 1 - Current from a single source of supply in the main or transmitting circuit induce by induction apparatus; Independent circuit(s); Electric distributor.
11. U.S. Patent 0,382,279 - Electro Magnetic Motor - 1888 May 1 - Rotation is produced and maintained by direct attraction; Utilizes shifting poles; Induction magnetic motor.
12. U.S. Patent 0,382,280 - Electrical Transmission of Power - 1888 May 1 - New method or mode of transmission; Dynamo motor

conversion with two independent conductors for long distance transmission; Alternating current transmission; Includes a disclaimer; Economic; Efficient.

13. U.S. Patent 0,382,281 - Electrical Transmission of Power - 1888 May 1 - Improvements in electromagnetic motors and their mode or methods of their operations; Motor is wound with coils forming independent circuits on the armature; Armature is mounted to rotate between two different poles; Armature will eventually synchronize with that of the generator; Windcoils or coils on the field magnets; Expose to continuous current to maintain a permanent field.

14. U.S. Patent 0,382,282 - Method of Converting and Distributing Electric Currents - 1888 May 1 - Related to electric distribution systems; Current is from a single main source or suitable transmitting circuit; Induction into an independent circuit; Divide the current from a single source; Transformations; Discovery of method to avoid prior liable and dangerous methods; True Dynamic induction.

15. U.S. Patent 0,382,845 - Commutator for dynamo electric machines - 1888 May 15 - Relates to dynamo-electric machines or motors; Improvements on devices to collect or communicate currents; Avoids destruction and wear of machine; Avoid adjustments due to destruction and wear; Enable practical construction of very large dynamo electric machines or motors with the minimum number of communicator segments; Increases safety and efficiency.

16. U.S. Patent 0,390,413 - System of electrical distribution - 1888 October 2 - Related to previous electric distribution systems developed by Dr. Tesla; Examples of systems in operation with motors or converters, or both, in parallel; Examples of systems in parallel; Examples of systems in series.

17. U.S. Patent 0,390,414 - Dynamo Electric Machine - 1888 October 2 - Related to the patents of Dr. Tesla and Charles F. Peck, numbers: US381968 and US382280; Ordinary forms of continuous and alternate current systems may be adapted to Dr. Tesla's system, with slight changes to the systems; Effects their forms; Only the best and most practical solutions are presented to the three most common forms of the devices applicable; Illustrated are the continuous (or closed) circuit machines, machines possessing armatures with coils connected diametrically (known as "open-circuits"), and machines with armature-coils of which have a common joint.

18. U.S. Patent 0,390,415 - Dynamo Electric Machine or Motor - 1888 October 2 - Improvement in the construction of dynamo or magneto electric machines; Novel form of frame and field magnets that renders the machine more sturdy and compact as a structure; Requires fewer parts; Less difficulty in construction; Lower expense; Useful to alternating and continuous current machines.

19. U.S. Patent 0,390,721 - Dynamo Electric Machine - 1888 October 9 - Relates chiefly to the alternate current machine invented by Mr. Tesla; Related to patents numbered US381968 and US382280; Seeks to avoid mechanical drawback of running high frequency machines; Efficient at low speeds; Producing rotating magnetic poles in one element of the machine and drive the other at a different speed.

20. U.S. Patent 0,390,820 - Regulator for Alternate Current Motors - 1888 October 9 - Improvement in the electrical transmission systems; Means of regulating and power of the motor or motors; Used with system of multiple motors primarily (or systems with motors and transformers) that have independent energizing circuits which act to set up progressive or shifting magnetic poles (i.e. the rotating magnetic field); Controls the speed of the motor.

21. U.S. Patent 0,396,121 - Thermo Magnetic Motor - 1888 January 15 - Widely known that heat applied to a magnetic body will lessen its magnetizing ability; High enough temperatures will destroy the magnetic field; Mechanical power by a reciprocating action obtained from the joint action of heat, magnetism, and a spring or weight (or other force); In this patent, the application of heat to a body that is magnetized by induction or otherwise to the action of heat until the magnetism is neutralized to allow a weight or a spring to give action and lessen the action of the heat to restore the magnetic effect to move the body in the opposite direction.

Tesla's US390721 Patent for a "Dynamo Electric Machine"

22. U.S. Patent 0,401,520 - Method of Operating Electro Magnetic Motors - 1889 April 16 - Improvements to previous instances of synchronous motors; Previous instances of synchronous motors have not been started by the alternating current generators; New discovery of simple method or plan of operating such motors; Requires no other device other than the motor itself; Conversion from a double circuit motor and which will start under the actions of an alternate current into a synchronizing-motor; synchronous motor definition.

23. U.S. Patent 0,405,858 - Electro Magnetic Motor - 1889 June 25 - Torque, instead of being the result in the difference in the magnetic periods or phases of the poles or to the attractive parts to whatever due, is produce to the angular displacement of the parts which, though movable with the respect to one another, are magnetized simultaneously, or approximately so, by the same currents; Concerns the armature and the field laminations of the magnetic core for the greatest magnetic attractions; Best means to achieve these results.

24. U.S. Patent 0,405,859 - Method of Electrical Power Transmission - 1889 June 25 - New and useful method of bringing up the motor to a desirable speed; Forms of alternating current machines, connected to alternating current generators, can be run as synchronous motor; Prior, alternating current will not start it; Construct a generator with two coils or sets of coils and connect them with a motor of corresponding coils or sets of coils; By means of two line wires, the motor and generator in like fashion; Related to US 390413 (for means of starting); Will operate as a single-circuit synchronizing system.

25. U.S. Patent 0,406,968 - Dynamo Electric Machine - 1889 July 16 - Relates to class of machines referred to as "Unipolar" machine (i.e., a disk or cylindrical conductor is mounted in between magnetic poles adapted to produce a uniform magnetic field); Construction of a machine with two fields, each having a rotary conductor mounted between its poles; Discussed the disk form primarily; The direction of the magnetism or order of the poles in one field of force is opposite to that of the other, so the rotation of the disk in the same direction forms a field from the center to the circumference and another from the circumference to the center; Contacts applied to the shafts form terminals of a circuit to produce a sum of electromotive forces of the two disks; If direction of the fields are the same, driving the disks in the opposite direction will obtain the same results.

26. U.S. Patent 0,413,353 - Method of Obtaining Direct current from Alternating Currents - 1889 October 22 - Superiority of alternating currents discussed; Delineates machines to convert alternating currents to direct (or continuous) currents at will at one or more points; Obtain direct currents from alternating currents; Active resistances to opposite electrical character, whereby the currents or current-waves of opposite character will be diverted through different circuits.

27. U.S. Patent 0,416,191 - Electro-Magnetic Motor - 1889 December 3 - Induction motor with two or more energizing circuits; alternating currents of differing phases are passed to produce rotation or operation of the motor; simple way consists of two circuits; alternate way consists of one line that divides the alternating current in the motor circuit and effects an artificial lag in one of the circuit of branches (such as by a different induction capacity).

28. U.S. Patent 0,416,192 - Method of Operating Electro-Magnetic Motors - 1889 December 3 - Related to US401520; Alternative improvements to synchronous motors; Torque and synchronous actions in motors; different field circuit of differing induction; Windings and shunts; Increases tendency to synchronize.

29. U.S. Patent 0,416,193 - Electro-Magnetic Motor - 1889 December 3 - Induction motor operation with two or more windings; securing differing phase differences; Phase proportional to the induction and inverse to the resistance encountered by the current; one circuit (the energizing circuit) should have high induction and low resistance (along with possessing the greater length or number of turns) and the converse in the other (which has few turns of finer wire or wire that has higher resistance); magnetic quantities of the poles should be approximately equal; Self-induction cores are much longer.

30. U.S. Patent 0,416,194 - Electric Motor - 1889 December 3 - Drawings include the motor seen in many of Tesla's photos; Classic alternating current electro-magnetic motor; Induction motor operation; Field and armature of equal strengths or magnetic quality; field and armature cores of equal amounts; Coils containing equal amount of copper.

31. U.S. Patent 0,416,195 - Electro-Magnetic Motor - 1889 December 3 - Induction motor operation with two or more windings; Differing phases; Structural and operational conditions; Armature operation conditions and the obedience to the energizing circuit and stator; Construction and organization principles.

32. U.S. Patent 0,417,794 - Armature for Electric Machines - 1889 December 24 - Construction principles of the armature for electrical generators and motors; Simple and economical; Coils of insulated conducting wire (or ribbon) may be wound or formed into bobbins;

Position of the bobbins dictate the windings; Armature has polar projections and maximum core-surface exposure to the field magnetic poles; Related to other applicant patents, numbers US327797, US292077, GB9013.

33. U.S. Patent 0,418,248 - Electro-Magnetic Motor - 1889 December 31 - Electric generator; Employment of an artificial cooling device; Enclosing the source of heat and that portion of the magnetic circuit exposed to the heat and artificially cooling the said heated part; Combination of an enclosed source of heat applied to a portion of said core; Magnetized core or body and a conductor within the field of force; Artificial cooling device for reducing the temperature of the heated portion thereof; Means for bringing a cooling gas or fluid in contact with the heated portion of the core, and means for controlling the admission of the same; The combination and coils wound thereon and a connection with a boiler for admitting steam into the channels, as set forth; Magnetized core containing passages or channels; Means for applying heat to a portion of the core.

34. U.S. Patent 0,424,036 - Electro-Magnetic Motor - 1890 March 25 - Cites then common language of his motors referred to as the "magnetic lag" motors; Another form of the induction motor with two or more energizing circuits with differing phase differences are passed to produce rotation or operation of the motor; Magnetism lags electrical parts of energizing effects; Manifests these effect simultaneously and not successively; Related to US405858; Torque is produced to the angular displacement of parts; Best means to achieve these results; prefer the use of alternating currents.

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35. U.S. Patent 0,428,057 - Pyromagneto Electric Generator - 1890 May 13 - Electric generator; Employment of an artificial cooling device; Enclosing the source of heat and that portion of the magnetic circuit exposed to the heat and artificially cooling the said heated part; Combination of an enclosed source of heat applied to a portion of said core; Magnetized core or body and a conductor within the field of force; Artificial cooling device for reducing the temperature of the heated portion thereof; Means for bringing a cooling gas or fluid in contact with the heated portion of the core, and means for controlling the admission of the same; The combination and coils wound thereon and a connection with a boiler for admitting steam into the channels, as set forth; Magnetized core containing passages or channels; Means for applying heat to a portion of the core.

36. U.S. Patent 0,433,700 - Alternating-Current Electro-Magnetic Motor - 1890 August 5 - Rotation of an electromagnetic motor is produced by the magnetic movements or the maximum of the pole's (or point's) magnetic effects from the conjoined actions (or the two energizing circuits) through which alternating currents (or similar rapidly-varying currents) are passed through; Multiple magnets are powered by artificial currents; Inverse strength of magnetism on stator for best rotation; Creates multiple phases through one circuit from one power source.

37. U.S. Patent 0,433,701 - Alternating-Current Motor - 1890 August 5 - Two sets of field-pole pieces of energized independently by the same source; Closed magnetic iron shunts or bridges in sets or series.

38. U.S. Patent 0,433,702 - Electrical Transformer Or Induction Device - 1890 August 5 - Main magnetic core and the primary and secondary coils interposed by a magnetic shield or screen between the coils or around one of the coils; Coils can be wound upon or built up around the magnetic shield; Adapted to or capable of being magnetically saturated by a predetermined current strength below the maximum in the primary.

39. U.S. Patent 0,433,703 - Electro-Magnetic Motor - 1890 August 5 - Describes the combination, in an alternating current motor, of an energizing coil and a core composed of two parts (one being protected from magnetization from the other one interposed between it and the coil); A rotating armature is motivated by the induced fields; Alternatively, a field magnet composed of a coil and core (with two sections in proximity of the coil and an inner section between the same); Also, a field magnet each composed of a coil and core (with two sections in proximity of the coil and an inner section between the same).

40. U.S. Patent 0,445,207 - Electro-Magnetic Motor - 1891 January 27 - Describes the combination, in a motor, of a primary energizing circuit (connected to a generator) and a secondary circuit in inductive relation to the primary; Each circuit has a different electrical character, resistance, induction capability, or number and type of windings.

41. U.S. Patent 0,447,920 - Method of Operating Arc-Lamps - 1891 March 10 - Abate or render inaudible sound emitted by arc lamps that are powered by (or supplied with) alternating currents by increasing the frequency of alternations (or pulsations) above the auditory level.

42. U.S. Patent 0,447,921 - Alternating Electric Current Generator - 1891 March 10 - A generator that produces alternations of 15000 per second or more.

454622 - System of Electric Lighting: Apparatus devised for the purpose of converting and supplying electrical energy in a form suited for the production of certain novel electrical phenomena; Used later as a practical RF power supply.

43. U.S. Patent 0,454,622 - System of Electric Lighting - 1891 June 23 - Apparatus devised for the purpose of converting and supplying electrical energy in a form suited for the production of certain novel electrical phenomena, which require currents of higher frequency and potential. It specifies an energy storage capacitor and discharger mechanism on the primary side of a radio-frequency transformer. This is the first-ever disclosure of a practical RF power supply capable of exciting an antenna to emit powerful electromagnetic radiation.

44. U.S. Patent 0,455,067 - Electro-Magnetic Motor - 1891 June 30 - Alternating current motor, with field magnets and energizing circuit armature-circuit and a core adapted to be energized by currents induced in its circuit by the currents in the field circuit; Condenser connected with or bridging the armature-circuit (e.g., the rotating element of the motor); Energizing circuit formed by coils wound thereon in a different inductive relations to the field and joined in a continuous or closed series; Combination of a condenser, the plates of which are connected, respectively, to the junctions of the circuits or coils.

45. U.S. Patent 0,455,068 - Electrical Meter - 1891 June 30 - Method of computing the amount of electrical energy expended in a given time in an electrical circuit; Operates by maintaining by the current a potential difference between two conductors in an electrolytic solution (or cell) uniform throughout the whole extent of such conductors exposed to the solution; Measurement of the variation of the resistance in one or both conductors dues to the gain or loss of metal by electro-deposition; Electrolytic cell and conductors passing through the cell and connected in series with a translating device; One or more resistances connected with the conductors and cell for establishing a potential difference between the two conductors through the solution of the cell; Tubular cell contains electrolytic solution and closed at each end.

46. U.S. Patent 0,455,069 - Electric Incandescent Lamp - 1891 June 30 - Incandescent lamp consisting of two isolated refractory conductors contained in a non-striking vacuum and adapted to produce light by incandescence; Globe or receiver exhausted to the non-striking point with two mounted isolated bodies (or metal wires) of refractory conducting material to emit light and sealed in; Terminal to connect with an electrical energy source; Refractory conducting material not to be rendered incandescent coated or covered with insulation.

47. U.S. Patent 0,459,772 - Electro-Magnetic Motor - 1891 September 22 - Alternating current non-synchronizing electric motor coupled with a synchronizing alternating current motor whereby the former starts the latter and throws it into synchronism with its actuating current; Switch mechanism for directing the current through either or both of the motors; Combination of two motors (one an alternating current torque motor [e.g., shifting poles via the energizing circuit] and the other a synchronizing alternating current motor) the armatures of which are mounted upon the same shaft; Switching circuit directing the alternating current or currents through the several circuits of one motor or the single circuit of the other.

48. U.S. Patent 0,462,418 - Method of and Apparatus for Electrical Conversion and Distribution - 1891 November 3 - Apparatus devised for the purpose of converting and supplying electrical energy in a form suited for the production of certain novel electrical phenomena which require currents of higher frequency and potential.

49. U.S. Patent 0,464,666 - Electro-Magnetic Motor - 1891 December 8 - Alternating current motor provided with two or more energizing or field circuits; One circuit connected to current source and the other (or others) in inductive relation thereto; One circuit connected to alternating currents and the other constituting high potential secondary circuit; Condenser interposed in the inductive circuit.

50. U.S. Patent 0,464,667 - Electrical Condenser - 1891 December 8 - Electrical condenser composed of plates or armatures immersed in oil; Plates or armatures can be adjustable.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 04:02:31 am**

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(<http://upload.wikimedia.org/wikipedia/en/thumb/7/7a/RMFpatent.PNG/284px-RMFpatent.PNG>)

381968 - Electro magnetic motor

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Title: **Re: Nikola Tesla**

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(<http://upload.wikimedia.org/wikipedia/commons/thumb/c/c5/US390721.png/384px-US390721.png>)

Tesla's US390721 Patent for a "Dynamo Electric Machine"

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### ***Fifty-one to one hundred***

1. U.S. Patent 0,487,796 - System of Electrical Transmission of Power - 1892 December 13 - Alternating current generator comprising independent armature-circuits formed by conductors alternately disposed; Currents developed differ in phase and the field magnet poles in excess of the number of armature-circuits; Motor having independent energizing circuits connected to the armature-circuit of the alternating current generator; Rotating magneto-electric machine yielding a given number of current impulses or alterations for each turn or revolution; Poles which in number are less than the number of current impulses produced in each motor-circuit by one turn or revolution; Multipolar alternating-current machine.

2. U.S. Patent 0,511,559 - Electrical Transmission of Power - 1893 December 26 - Method of operating motors having independent energizing circuits; Passing alternating currents through circuits and retarding the phases of the current in one circuit to a greater extent; Directing alternating currents from a single source through both circuits of a motor and varying or modifying the relative resistance or self-induction of motor circuits, producing in currents differences in phases.

3. U.S. Patent 0,511,560 - System of Electrical Power Transmission - 1893 December 26 - Motor having independent energizing circuits connected with a source of alternating currents; Means of rendering the magnetic effects to said energizing circuit of difference phase; Armature within the influence of the energizing circuit; Energizing circuits connected in derivation or multiple arc and of different active or variable resistance (or self-inductance); Pairs of mains connected and a multiple circuit differential phase; Change of time-period of currents passing through an electro-motive phase-changing device interposed between the mains and the destination; Includes a correction.

4. U.S. Patent 0,511,915 - Electrical Transmission of Power - 1894 January 2 - Method of operating electro-magnetic motors; Passing alternating currents through one of the energizing circuits and inducing by such current in the other energizing circuit or circuits of the motor.

5. U.S. Patent 0,511,916 - Electric Generator - 1893 August 19 - Combination with the piston or equivalent element of an engine which is free to reciprocate under the action thereon of steam or a gas under pressure, of the moving conductor or element of an electric generator in direct mechanical connection; Engine and generator being adjusted by their relative adjustment with respect to period to produce currents of constant period; Electric generator having inducing or induced elements one of which is capable of oscillation in the field of force, the movable element being carried by the piston rod of the engine; Relation as to respect of period of electrical vibration will not disturb the period of the engine; Cylinder and piston reciprocating by steam or gas under pressure of a spring maintained in vibration by the movement of the piston, and the electric generator, the movable conductor or element of which is connected with the piston; Method of constructing and adapting elements; Imparting the oscillation of an engine to the moving element of an electric generator and regulating the period of mechanical oscillation by adjustment of the reaction of the electric generator.

512340: Coil for Electro-Magnets; Example of one of the first bifilar coils.

Electrical conductor, 514167; Early example of coaxial cable.

6. U.S. Patent 0,512,340 - Coil for Electro-Magnets - 1893 July 7 - Effect of mutual relation self-induction exploited; Adjacent coil convolutions formed parts exists so that the potential difference is sufficient to neutralize negative effects; Object to avoid expensive, cumbersome, and difficult condensers; Bifilar coil winding technique.

7. U.S. Patent 0,514,167 - Electrical Conductor - 1894 February 6 - Prevent loss in line conductors; Insulate and encase conductors with a sheathing which is connected to the ground; Sheath or screen; Coaxial cabling.

8. U.S. Patent 0,514,168 - Means for Generating Electric Currents - 1894 February 6 - Generating and utilizing electrical energy discovered by Mr. Tesla; related to US454622 and US462418; Maintenance of intermittent or oscillatory discharges of a condenser of suitable circuit containing translating devices; Discharges take place in insulating liquids (such as oil); Varying spark gap distances; Keep circulating flow in liquid; Illustrates preferred manner.

9. U.S. Patent 0,514,169 - Reciprocating Engine - 1893 August 19 - Provide a means of engines, which under the applied forces such as elastic tension of steam or gas under pressure, that will yield constant oscillatory movements (in wide limits); Function is constant irrespective of the loads, frictional losses, or other factors (which degrade other engines); Convert pressure into mechanical power; Better at higher temperatures and pressures than previous engines; Same principles of this engine appear later in the modern gasoline motors of automobiles; often cited by enthusiasts as a version of the "earthquake machine."

10. U.S. Patent 0,514,170 - Incandescent Electric Light - 1894 February 6 - Related to US454622; Incandescent electric lamps; Particular forms of the lamp in which a light giving small body or button of refractory material is supported by a conductor entering a very highly exhausted globe or receiver; Conducting screen surrounds the supporting conductor; Single node vacuum tube.

11. U.S. Patent 0,514,972 - Electric Railway System - 1894 February 20 - Utilizes high potentials and high frequencies; Insulated and screened supply conductor along the line of travel; Induction bar or plate in inductive relation to the screened conductor and an electrical connection to the motor.

12. U.S. Patent 0,514,973 - Electrical Meter - 1894 February 20 - Method of measuring the amount of electrical energy expended in a given time in an electric circuit of alternating currents; High tension discharge through a rarefied gas between two conductors; Computing

from the amount of the particles thrown off from the conductors or one of the same by action of the discharge of the energy expended; Primary coil in series with a translating device; High tension secondary; Two carbon conductors sealed in an exhausted receiver and coated with an insulating material on three sides, one terminal of each conductor being connected to a terminal of a secondary.

13. U.S. Patent 0,517,900 - Steam Engine - 1893 December 29 - Cylinder and reciprocating piston (with a spring) and controlling slide valve of an engine adapted to be operated by steam or a gas system under pressure of an independently controlled engine of constant period operating the said valve.

14. U.S. Patent 0,524,426 - Electromagnetic Motor - 1894 August 14 - Alternating current motor with energizing coils adapted to be connected with an external circuit of cores of different magnetic susceptibility so as to exhibit differences of magnetic phase under the influence of an energizing current; Rotary armature of magnetic poles and coils adapted to be connected with the external circuit surrounding the same; Cores constructed of different size, length, mass, or material whereby their magnetic phase will differ in time.

15. U.S. Patent 0,555,190 - Alternating Motor - 1896 February 25 - Related to US381968 and US382280; Mode and plan of operating electric dynamic motor generators by progressive shifting; Magneto-electric machine; Dynamo motor conversion with two independent alternating current circuits; Transmission of energy; Rotating magnetic field principles.

567818: Electrical Condenser; Examples of improved capacitors.

16. U.S. Patent 0,567,818 - Electrical Condenser - 1896 September 15 - Condenser constructed or provided with means for exclusion of air or gas; Armature composed of a conducting liquid; Armatures in two separate bodies of conducting liquid insulated electrically and contained in a receptacle; Insulating liquid seal on the surface of the conductive liquids.

17. U.S. Patent 0,568,176 - Apparatus for Producing Electrical Currents of High Frequency and Potential - 1896 September 22 - Conversion of direct current into currents of high frequency. Combination of high self-inductance circuit, choking coil circuit controllers adapted to make and break the circuit, a condenser into which the back-emf discharges when interrupted, and a transformer through the primary of which the condenser discharges; Motor for driving the controller; 'Current of high electromotive force (voltage) which is induced at each break of the main circuit (back-emf) furnishes the proper current for charging the condenser (capacitor).'

18. U.S. Patent 0,568,177 - Apparatus for Producing Ozone - 1896 September 22 - Primarily provides a simple, cheap, and effective apparatus for the production of ozone (or such gases); Obtained by the action of high-tension electrical discharges; Related to US462418 (November 3, 1891) and US454622 (June 23, 1891); In combination with a low self-induction and resistance circuit of direct currents, of a controller for making and breaking the same, a series-wound motor included in or connected with the charging-circuit and driving the controller; A condenser around the point of interruption in a circuit around the controller, and a transformer through the primary of which the condenser discharges (producing the potential necessary for such primary discharge and the coil raises the potential of such discharge) and which is in the discharge-circuit of the condenser; Device for maintaining a current of air between the discharge-surface; A fan-motor (maintaining a current of air between the discharge-surfaces) is connected with the charging-circuit.

19. U.S. Patent 0,568,178 - Method of Regulating Apparatus for Producing Electric Currents of High Frequency - 1896 September 22 - Cited by Tesla in "the True Wireless" (illustrated in that article as Fig. 10) in the wireless field for the concatenated tuned circuits; regulates the energy delivered by a system for the production of high-frequency currents and comprising of a supply-side circuit whose current is diverted into a charging circuit of high self-induction, a condenser (charged by the supply circuit), another circuit (with low self-induction) which the same discharges through (and raises the potential of the condenser), and means for controlling the charging and the discharging of same, the said method consisting in varying the relation of the varying frequencies of the impulses in the circuit comprise the system.

20. U.S. Patent 0,568,179 - Method of and Apparatus for Producing Currents of High Frequency - 1896 September 22 - used in the laboratory at New York, 35 South Fifth Avenue lab for employing currents of different phase; method for producing electric currents of high frequency, which consists in generating an alternating current, charging a condenser thereby during determinate intervals of each wave of said current, and discharging the condenser through a circuit of low self-induction; the combination with a source of alternating current, a condenser, a circuit-controller adapted to direct the current during determinate intervals of each wave into the condenser for charging the same, and a circuit of low self-induction into which the condenser discharges; the combination with a source of alternating current, a synchronous motor operated thereby, a charging-circuit in which the energy of said current is stored, a circuit-controller operated by the motor and adapted to interrupt the charging-circuit through the motor at determinate points in each wave, a condenser connected with the motor-circuit and adapted on the interruption of the same to receive the accumulated energy stored therein, and a circuit into which the condenser discharges.

21. U.S. Patent 0,568,180 - Apparatus for Producing Electrical Currents of High Frequency - 1896 September 22 - an isochronous mechanical break used in the laboratory at New York, 35 South Fifth Avenue lab for employing currents of different; patent covers possible variations within Tesla's wireless systems; a combination with a source of alternating current, of a condenser adapted to be charged thereby, a circuit into which the condenser discharges in a series of rapid impulses and in synchronism with the source, and a circuit-controller for effecting the charge and discharge of said condenser, composed of a set of sub-divided conductors (a pair of angularly-adjustable terminal and two or more rotating conductors) moveable into and out of proximity with (eg., passing by) each other, whereby a spark may be maintained between them and the circuit closed thereby during determined intervals.

22. U.S. Patent 0,577,670 - Apparatus for Producing Electric Currents of High Frequency - 1897 February 23. Two input circuits are each pulsed with a 25% duty cycle. Additionally, the brushes are phased so that the on states (discharges) never overlap. The output circuit has a toggled 50% output duty cycle, double the duration of the input pulse. Resultant back-emf is rectified to capacitors, and fed through a Tesla coil to a load.

23. U.S. Patent 0,577,671 - Manufacture of Electrical Condensers, Coils and Similar Devices - 1897 February 23 - Improvements of condensers, transformers, self-induction coils, rheostats, and other similar devices; Used in areas where currents of high potentials are brought into close proximity; Method of excluding gas or air from the dielectric environment of such devices; Insulated material rendered fluid by heat; Material permeated the interstices of device and held under pressure; Material cooled and solidified under pressure.

24. U.S. Patent 0,583,953 - Apparatus for Producing Currents of High Frequency - 1897 June 8 - Related to US568176; Conversion of electrical current of ordinary character into high frequency and high potential; Can use either continuous (i.e., direct) or alternating currents.

25. U.S. Patent 0,593,138 - Electrical Transformer - 1897 November 2 - Novel form of transformer or induction-coil and a system for the transmission of electrical energy by means of the same; Improvement of electrical transformers; Develops electrical currents of high potential; Corrects construction principles heretofore manufactured; Higher potential for transmission than has ever been practically employed heretofore; Free from the danger of injury from the destruction of insulation; Safe to handle; High-frequency power supply for lighting and other applications.

26. U.S. Patent 0,609,245 - Electrical Circuit Controller - 1898 August 16 - A circuit controller (see also 609245, 609246, 609247, 609250, 609251, 611719); Conductive fluid make and break circuit; Nozzle and conductor construction and their relative method of operation; Single source of power for operation; Nozzle and receptacle interaction; Combination of rotating receptacle and motor, a magnetic body in receptacle, and an exterior mounted magnetic body.

27. U.S. Patent 0,609,246 - Electric Circuit Controller - 1898 August 16 - A circuit controller (see also 609245, 609246, 609247, 609250, 609251, 611719); Conductive fluid make and break circuit; Conductive liquid forming terminals; Two orifices with relative movement that can direct jets or streams; Two insulated compartments; Jets or streams are brought into intermittent contact.

28. U.S. Patent 0,609,247 - Electric Circuit Controller - 1898 August 16 - A "circuit controller in which an independently-mounted terminal operated in a similar manner by a rotating body of conducting fluid may be enclosed within a gas-tight receptacle"; Conductive fluid make and break circuit; A combination of a closed receptacle containing a fluid, a method to rotate said receptacle, a mounted support, means for opposing or preventing the mount's movement in the same direction of the receptacle, and a terminal conductor in the support; Terminal capable of rotating about its axis or provided with rotating contacts; Fluid comprises the opposite terminal; Eccentric weight to a spindle; Rotating terminal connected with spindle; Receptacle mounted to rotate about an axis inclined to the vertical; Spindle inside

receptacle; Weighted armature; Fluid is displaced by centrifugal force.

29. U.S. Patent 0,609,248 - Electric Circuit Controller - 1898 August 16 - A circuit controller (see also 609245, 609246, 609247, 609250, 609251, 611719) in which one terminal body moves through jets or streams intermittently and intercepts jets or streams; Conductive fluid make and break circuit; Rotary conductor; One terminal body moves through jets or stream intermittently and intercepts jets or streams; One rigid terminal receives directed jets or streams; Combination in a receptacle of a conducting disk and an insulated disk; Stationary tube or duct to direct jets or streams toward the conductor across the path of intermittent projections.

30. U.S. Patent 0,609,249 - Electric Circuit Controller - 1898 August 16 - A circuit controller (see also 609245, 609246, 609247, 609250, 609251, 611719); Conductive fluid make and break circuit; Combination in a circuit controller with a closed rotary receptacle, of a rigid conductor mounted in the same and through which the circuit is intermittently established, and means for directing a jet of stream of a fluid which is contained in the receptacle, against the said body so as to affect its rotation independently of the receptacle; Rotary receptacle of a body or part mounted within the receptacle and concentrically mounted therewith, a conducting-terminal supported by said body and capable of rotation of the receptacle so as to oppose, by gyroscopic action, the rotation of the support, and means for directing a jet of conducting fluid against said terminal; A rotary receptacle of a support for a conductor mounted thereon concentrically with the receptacle and a gyrostatic disk carried by the support and adapted, when rotating, to oppose its movement in the direction of the rotation of the receptacle.

31. U.S. Patent 0,609,250 - Electrical Igniter for Gas Engines - 1898 August 16 - Ignition system principles used today in automobiles; Operation of a machine that requires a spark, flame, or any other similar effect; More certain and satisfactory for use of and control by the machine or apparatus; Charging and discharging a condenser through switch or communicator.

32. U.S. Patent 0,609,251 - Electric Circuit Controller - 1898 August 16 - A circuit controller (see also 609245, 609246, 609247, 609250, 609251, 611719). Circuit comprising, in combination, a receptacle containing fluid, means for rotating the receptacle, and a terminal supported independently of the receptacle and adapted to make and break electric connections; Receptacle contains a conductive and non-conductive fluid; Means of rotating the receptacle; Terminal adapted to make and break electrical connection with the conductive fluid within or under the non-conductive fluid.

33. U.S. Patent 0,611,719 - Electrical Circuit Controller - 1898 October 4 - A circuit controller (see also 609245, 609246, 609247, 609250, 609251, 611719). Conductive fluid make and break circuit; The combination of a closed receptacle, of a circuit controller contained therein, and surrounded by an inert medium under pressure; Method of maintaining an inert atmosphere under pressure; Vessel containing a liquefied inert gas and method of communicating with the interior of the receptacle; One terminal is of a conductive fluid (such as mercury); Combination of conductors of series of conductors constituting one terminal of a circuit controller, means of maintaining a stream or jet of conductive fluid as the other terminal with which the conductor makes intermittent contact; Close receptacle containing terminal; Method of excluding oxygen from terminals; Motive device for rotating conductors; Force-pump in direct connection with conductor for maintaining a circulation of conducting fluid contained in the receptacle through the nozzle or nozzles; Rotating screw with conductor and extending into a well in which the fluid collects; Duct or ducts leading from the well to points from which the fluid will be direct against the rotating conductor; Magnetic core mounted on spindle.

34. U.S. Patent 0,613,735 - Electric Circuit Controller - 1898 November 8 - A circuit controller (see also 609245, 609246, 609247, 609250, 609251, 611719). Conductive fluid make and break circuit; Combination with rigid and fluid conductors adapted to be brought intermittently into contact with each other; Means for imparting rotary motion to rigid and fluid conductors; Means to rotate by the movement of a fluid conductor.

35. U.S. Patent 0,613,809 - Method of and Apparatus for Controlling Mechanism of Moving Vehicle or Vehicles - 1898 July 1 - Tesla "Boat" patent; First logic gate; Art of controlling the movements and operation of a vessel or vehicle at a distance; Electromagnetic waves conveyed to vessel by the natural media and rendering by their means the controlling-circuit active or inactive; New and useful improvements in methods of and apparatus for controlling from a distance; Solution for controlling from a given point the operation of mechanisms; No intermediate wires, cables, or other form of electrical or mechanical connection with the object save the natural media in space; explanation of most practical and effectual method and apparatus; Remote control.

36. U.S. Patent 0,645,576 - System of Transmission of Electrical Energy - 1900 March 20 - Commonly referred to as the radio patent; Related to wireless telegraphy; Wireless transmission of electric power through the natural media; Cites well known radiant energy phenomena and the experiments of William Crooke; Corrects previous errors in theory of behavior when used by the methods and means of Mr. Tesla; Discovery of highly important and useful facts which heretofore have been unknown; Deprive dialectic of air when impressing electromotive forces of a certain character and magnitude unto it; Conductivity of the air increases with the augmentation of the pressure and the rarefaction; Law of conductivity of the air is quite different from heretofore established; Illustrations of the facts.

37. U.S. Patent 0,649,621 - Apparatus for Transmission of Electrical Energy - 1900 May 15 - Related to US645576; New and useful combinations employed; Transmitting coil or conductor arranged and excited to cause currents or oscillation to propagate through conduction through the natural medium from one point to another remote point therefrom and a receiver coil or conductor of the transmitted signals; Production of currents of very high potential; Transmitting station and receiving station.

38. U.S. Patent 0,655,838 - Method of Insulating Electric Conductors - 1900 October 23 - Method and practical application of insulation by freezing and solidification; Expounding on Faraday's hypothesis of freezing substances make them possess a higher dielectric level to insulate transmission conductors; Improvements in the method set out by Faraday; Method of insulating electrical conductors which consist in surrounding or supporting said conductors by a material which acquires insulating properties when frozen or solidified; Method of maintaining a conductor within a gaseous cooling agent by the continuous application of said agent; Trough or conduit with circulating cooling agents; Reissued as U.S. Patent RE11,865.

39. U.S. Patent 0,685,012 - Means for Increasing the Intensity of Electrical Oscillations - 1900 March 21 - A method for producing a "great increase in the intensity and duration of the (electrical) oscillations excited in a freely-vibrating or resonating circuit by maintaining the same at a low temperature". Producing increase intensity and duration of electric oscillations; Combination of a circuit to possess freely-vibrating excitations and of means for artificially cooling the circuit to a low temperature; Low temperature resonating circuit; Uses of electrical impulse oscillations; A circuit upon which oscillations are impressed, and which is adapted to vibrate freely, in combination with a receptacle containing an artificial refrigerant in which the circuit is immersed; Low resistance oscillators in a series of transmitting and receiving circuits in a system for the transmission of energy.[5]

40. U.S. Patent 0,685,953 - Apparatus for Utilizing Effects Transmitted from a Distance to a Receiving Device through Natural Media - 1899 June 24 - Heinrich Hertz methods cited; Induction method cited; Ground conduction method cited; Previous methods had limitations that result in great disadvantages for utilization; Wireless transmission developed by Dr. Tesla cited; Transmitting station coil arranged and excited to cause arbitrary or intermitted oscillation propagation to another remote point receiver station coil; Air is an excellent insulator; Air strata used for means of conduction for production of generating actions at a distance; Use of metallic conductor; Transmitting apparatus of signals or intelligence should produce effect as strong as possible; Charge a condenser or capacitor to utilize the potential energy.

41. U.S. Patent 0,685,954 - Method of Utilizing Effects Transmitted through Natural Media - 1899 August 1 - Utilizing effects or disturbances transmitted through the natural media, which consists on charging a storage device with energy from an independent source, controlling the charging of said device by the actions of the effects or disturbances (during succeeding intervals of time determined by means of such effects and disturbances corresponding in succession and duration of the effects and disturbances), and coincidentally using the stored energy for the operating a receiving device; Independent source may be at a distant transmitting electrical energy; Receiving device circuit discharges the accumulated stored energy (which may be potential energy) and causing variations in resistance in a circuit including an independent source of electricity and a storage device; Effecting the storage (such as, in a condenser) during any desired time interval and under control of such effects of disturbances; Accumulated energy may operate a transformer (by discharging through a primary circuit at predetermined times) which, from the secondary currents, operate the receiving device.

42. U.S. Patent 0,685,955 - Apparatus for Utilizing Effects Transmitted From A Distance To A Receiving Device Through Natural Media - 1899 June 24 - An apparatus for transmitting signals or intelligence through the natural media from a sending station to a distant point the combination of a generator or transmitter adapted to produce arbitrarily varied or intermitted electrical disturbances or effects in the natural media, and for utilizing electrical effects or disturbances transmitted through the natural media, the combination with a source of such effects of disturbances of a charging-circuit adapted to be energized by the action of such effects or disturbances, between which a difference of potential is created by such effects or disturbances, a storage device included in the charging-circuit and adapted to be charged thereby, a receiver, a means for commutating, directing, or selecting the current impulses in the charging circuit so as to render them suitable for charging the storage device, a device for closing the receiving-circuit, means for causing the receiver to be operated by the energy accumulated in the storage device at arbitrary intervals of time when connecting the receiving-circuit with the storage device for periods of time predetermined as to succession and duration, and means for discharging the storage device through the receiving-circuit at arbitrary intervals of time.

43. U.S. Patent 0,685,956 - Apparatus for Utilizing Effects Transmitted through Natural Media - 1899 August 1 - Related to his Magnifying Transmitter; Used as part of Dr. Tesla's Colorado Spring receivers that posed a distributed high-Q helical resonators, radio frequency feedback, crude heterodyne effects, and regeneration techniques; an apparatus for transmitting signals or intelligence through the natural media from a sending station to a distant point the combination of a generator or transmitter adapted to produce arbitrarily varied or intermitted electrical disturbances or effects in the natural media; combination of a source of electricity, a transformer, a device normally of high resistance but adapted to have its resistance reduced when acted upon by the effects or disturbances, with a receiving circuit connected with a condenser and a device adapted to open and close the receiving circuit at predetermined intervals of time.

44.

US685957 : Utilization of Radiant Energy

U.S. Patent 0,685,957 - Apparatus for the Utilization of Radiant Energy - 1901 November 5 - 4 illustrations; Radiation charging and discharging conductors; Radiations considered vibrations of ether of small wavelengths and ionize the atmosphere; Radiant energy throws off with great velocity minute particles which are strongly electrified; Rays or radiation falling on insulated-conductor connected to a condenser (i.e., a capacitor), the condenser indefinitely charges electrically; Radiation (or radiant energy) include many different forms; Related to US577671; Transmitted or natural energy can be used; Photoelectric stepping alternating current motors. [6]

45. U.S. Patent 0,685,958 - Method of Utilizing of Radiant Energy - 1901 November 5 - 2 illustrations; Ways of using radiation charging and discharging conductors; Rays or radiation falling on insulated-conductor connected to a condenser (i.e., a capacitor), the condenser indefinitely charges electrically; Radiation (or radiant energy) include many different forms; Related to US577671; Photoelectric stepping alternating current motors.

46. U.S. Patent 0,723,188 - Method of Signaling - 1900 July 16 - Elevated transmitter capacitance; Coil; Earth electrode; Signal generator; Partial basis of radio design.

47. U.S. Patent 0,725,605 - System of Signaling - 1900 July 16 - Elevated transmitter capacitance; Coil; Earth electrode; Signal generator; Apparatus of and method for electrical disturbance or impulses; Transmission of intelligent messages; Govern the movement of distant automata; Radio transmissions; Partial basis of radio design.

48. U.S. Patent 0,787,412 - Art of Transmitting Electrical Energy through the Natural Mediums - 1900 May 16 - Elevated transmitter capacitance; Coil; Earth electrode; Signal generator; Apparatus for generating and receiving electrical signals; Tuned resonant circuits; Physics of propagation; Non-Hertzian notes; Globe as conductor; Low frequency oscillations; Basis of radio.

49. U.S. Patent 1,061,142 - Fluid Propulsion - 1909 October 21 - Transmission and transformation of mechanical power through the agency of fluid; Propelled fluid moves in a natural path; Avoids losses; Easy; Simple.

50. U.S. Patent 1,061,206 - Turbine - 1909 October 21 - Improvements in rotary engines and turbines; Mechanical power based on the vehicle of fluid for power; Known as the Tesla turbine; Bladeless turbine design; Utilizes boundary layer effect; Fluid does not impact the blades as in a conventional turbine.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 04:05:32 am**

(<http://upload.wikimedia.org/wikipedia/en/4/47/TeslaBifilar.png>)

512340: Coil for Electro-Magnets; Example of one of the first bifilar coils.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 04:06:10 am**

([http://upload.wikimedia.org/wikipedia/en/thumb/3/32/Electrical\\_conductor.png/800px-Electrical\\_conductor.png](http://upload.wikimedia.org/wikipedia/en/thumb/3/32/Electrical_conductor.png/800px-Electrical_conductor.png))

Electrical conductor, 514167; Early example of coaxial cable.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 04:06:47 am**

(<http://upload.wikimedia.org/wikipedia/en/1/12/Pat567818.png>)

567818: Electrical Condenser; Examples of improved capacitors.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 04:07:50 am**

(<http://upload.wikimedia.org/wikipedia/commons/0/0a/PhotoelectricEffect%28Tesla%29.png>)

US685957 : Utilization of Radiant Energy

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 04:08:19 am**

***One hundred and one plus***

1. U.S. Patent 1,113,716 - Fountain - 1914 October 13 - Improvement in the construction of fountains and aquarium displays; Large mass of fluid in motion; Display of great power; Large displacement of fluid with little expense of energy.

2.



View in elevation

Free terminal and circuit of large surface with supporting structure and generating apparatus

U.S. Patent 1,119,732 - Apparatus for Transmitting Electrical Energy - 1902 January 18 - High-voltage, air-core, self-regenerative resonant transformer; Oscillator for wireless transmission of electromagnetic energy; Tesla coil.

3. U.S. Patent 1,209,359 - Speed-Indicator - 1916 December 19 - Improvement that uses the adhesion and viscosity of a gaseous medium [preferably air] to measure speed [or measure the torque-transmission] between indicator and driver; Durable; Simple; Inexpensive; Reliable.

4. U.S. Patent 1,266,175 - Lightning-Protector - 1918 May 14 - Novel and advantageous construction of a protector in accord with the true character of the phenomena; Corrects Benjamin Franklin's hypothesis, and subsequent construction, for lightning protectors.

5. U.S. Patent 1,274,816 - Speed Indicator - 1918 August 6 - Speedometer that possesses the feature of: Linearly proportional torque readings; Strong low speed torsional effects; not affected by atmospheric density, temperature, nor magnetic influences; Rugged; Simple; Economical.

6. U.S. Patent 1,314,718 - Ship's Log - 1919 September 2 - Novel and advantageous construction of a ship's log; Instantaneous reading of knots or miles-per-hour.

7. U.S. Patent 1,329,559 - Valvular Conduit - 1920 February 3 - Improvement by means of a conduit or channel characterized by valvular action; Conduit has baffles, recesses, projections, enlargements, or buckets that channels the flow's movement one way more efficiently; Mechanical diode; One-way valve with no moving parts.

8. U.S. Patent 1,365,547 - Flow-Meter - 1921 January 11 - Related to the meter of measurement for velocity and quantity of fluid flow.

9. U.S. Patent 1,402,025 - Frequency-Meter - 1922 January 3 - Ascertain the periodic electric frequency and electric oscillation by the rotation or reciprocation of an electromechanical device.

10. U.S. Patent 1,655,113 - Method of Aerial Transportation - 1928 January 3 - VTOL aeroplane; Describes a method of achieved vertical take-off, transition to and from horizontal flight, and vertical landing, with a tilting rotor. Including transportation which consists in developing by the propelling device a vertical thrust in excess of the normal, causing thereby the machine to rise in an approximately vertical direction, tilting it and simultaneously increasing the power of the motor and thereby the propeller thrust, then gradually reducing the propeller thrust as forward speed is gained and the plane takes up the load, thus maintaining the lifting force sensibly constant during flight, tilting the machine back to its original position and at the same time increasing the power of the motor and thrust of the propeller and effecting a landing under the restraining action of the same.

11. U.S. Patent 1,655,114 - Apparatus for Aerial Transportation - 1928 January 3 - VTOL aircraft; Includes a correction.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 04:09:06 am**

([http://upload.wikimedia.org/wikipedia/commons/0/01/Original\\_Tesla\\_Coil.png](http://upload.wikimedia.org/wikipedia/commons/0/01/Original_Tesla_Coil.png))

View in elevation

Free terminal and circuit of large surface with supporting structure and generating apparatus

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 04:09:32 am**

### ***Reissued patent***

1. U.S. Patent RE11,865 - Method of Insulating Electric Conductors - 1900 October 23 - Expounding on Faraday's hypothesis of freezing substances make them possess a higher dielectric level to insulate transmission conductors; Improvements in the method set out by Faraday; Method of insulating electrical conductors which consist in surrounding or supporting said conductors by a material which acquires insulating properties when frozen or solidified; Method of maintaining a conductor within gaseous cooling agent by the continuous application of said agent; Trough or conduit with circulating cooling agents.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 04:09:58 am**

### ***Anomalies***

In the book "Tesla: Man Out of Time", there are references to missing patents[7]. Some patents of his experiments are lost to history, as well as some of the scientific notes and records pertaining to Dr. Tesla's patents. These, though, are alluded to in the redacted FBI files. The missing patents may be among effects seized by government agents and military intelligence officers following Dr. Tesla's death in 1943. In various patent logs, it is recorded Tesla received U.S. Patent 613,819 for "Filings Tube" (such as Charles Henry Sewall's "Wireless Telegraphy" (New York, 1904)).[8][9] This number does not match the U. S. Patent office records (that patent is issued to G. Kelly for an "Illuminating torch").

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 04:10:25 am**

### ***British***

\* patent number - name of patent - date of application - notes on patent

1. GB1877 - Improvements in Electric Lamps - 1886 February 9
2. GB2801 - Improvements in Reciprocating Engines and Means for Regulating the Period of the same - 1894 February 8
3. GB2812 - Improvements in Methods of and Apparatus for the Generation of Electric Currents of Defined Period - 1894 February 8
4. GB2975 - Improvements in Dynamo Electric Machines - 1886 March 2
5. GB6481 - Improvements relating to the Electrical Transmission of Power and to Apparatus therefor - 1888 May 1
6. GB6502 - Improvements relating to the Generation and Distribution of Electric Currents and to Apparatus therefor - 1888 May 1
7. GB6527 - Improvements relating to Electro-motors - 1889 April 16
8. GB8200 - Improvements relating to the Transmission of Electrical Energy - 1905 April 17
9. GB8575 - Improved Methods of and Apparatus for Generating and Utilizing Electric Energy for Lighting Purposes - 1891 May 19
10. GB11293 - Improvements relating to the Utilization of Electromagnetic, Light, or other like Radiations Effects or Disturbances transmitted through the Natural Media and to Apparatus therefor - 1901 June 1
11. GB11473 - Improvements in Alternating Current Electro-magnetic Motors - 1891 July 6

12. GB12866 - Improvements in Electrical Circuit Controllers
13. GB13563 - Improvements in, and relating to, the Transmission of Electrical Energy - 1901 July 3
14. GB14550 - Improvements relating to the Insulation of Electric Conductors - 1900 August 14
15. GB14579 - Improvements in and relating to the Transmission of Electrical Energy - 1901 July 17
16. GB16709 - Improvements relating to the Conversion of Alternating into Direct Electric Currents - 1889 October 22
17. GB19420 - Improvements in Alternating Current Electro-magnetic Motors - 1889 December 3
18. GB19426 - Improvements in the Construction and Mode of Operating Alternating Current Motors - 1889 December 3
19. GB20981 - Improvements relating to the Production, Regulation, and Utilization of Electric Currents of High Frequency, and to Apparatus therefor - 1896 September 22
20. GB24001 - Improved Method of Imparting Energy to or Deriving Energy from a Fluid and Apparatus for use therein - 1910 October 17 - Bladeless turbine having disc rotors; Openings in the central portions and separating star-washers; Riveted into single, solid structure; Keyed to the shaft; Turbine or rotary engine.
21. GB24421 - Improvements in Systems for the Transmission of Electrical Energy and Apparatus for use therein - 1897 October 21
22. GB26371 - Improvements in the Method of and Apparatus for Controlling the Mechanism of Floating Vessels or Moving Vehicles - 1898 December 13
23. GB174544 - Improvements in Methods of and Apparatus for the Generation of Power by Elastic Fluid Turbines - 1921 April 1
24. GB179043 - Improved Process of and Apparatus for Production of High Vacua - 1921 March 24
25. GB185446 - Method of and Apparatus for Aerial Transportation - 1921 April 4
26. GB186082 - Improvements in the Construction of Steam and Gas Turbines - 1921 March 24 - Two heavier end-plate; Tapered toward the periphery; Reduces maximum centrifugal stress; Turbine.
27. GB186083 - Improved Method of and Apparatus for the Economic Transformation of the Energy of Steam by Turbines - 1921 March 24 - Improvements to increase efficiency of steam power plants and thermo-dynamic transformers; Producing motive power; Economical; Operable at very high temperature; Operable with cheap fuel; Avoids deteriorating actions previously common; System is related to the Tesla turbine.
28. GB186084 - Improved Process of and Apparatus for Deriving Motive Power from Steam - 1921 March 24
29. GB186799 - Process of and Apparatus for Balancing Rotating Machine Parts - 1921 September 2

Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 04:10:48 am**

### **Canadian**

\* patent number - name of patent - date filed - notes on patent

1. CA24033 - Improvements in Dynamo Electric Machines - 1886 April 24
2. CA24338 - Electric Arc Lamp - 1886 June 18
3. CA29537 - Improvements in Methods of and Apparatus for the Electrical Transmission of Power - 1888 May 1
4. CA30172 - Improvements in Methods of and Apparatus for Converting and Distributing Electric Currents - 1888 May 1
5. CA33317 - Improvements in Methods and Apparatus for Converting Alternating into Direct Currents - 1889 December 19
6. CA135174 - Improvements in Fluid Propulsion - 1910 November 24 - Tesla Pump
7. CA142352 - Improvement in the Art of Transmitting Electrical Energy Through the Natural Media - 1906 April 17

Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 04:11:12 am**

### **Spanish**

\* patent number - name of patent - date of application - notes on patent

1. ES23742 - Mejoras en el sistema de gobierno del mecanismo de recipientes o barcos flotantes o vehículos móviles por medio de los aparatos que se describen - 1899 January 31
2. ES26430 - Mejoras en el aislamiento de conductores eléctricos - 1900 August 14
3. ES26801 - Mejoras en el aislamiento de conductores eléctricos - 1900 November 6
4. ES49122 - Mejoras introducidas en los motores actuados por fluidos - 1910 October 21
5. ES81244 - Un procedimiento, con su aparato correspondiente para la obtención de fuerza motriz por medio de turbinas de fluidos elásticos. - 1922 March 31
6. ES81253 - Un método, con su aparato correspondiente para transportes aéreos - 1922 April 3

Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 04:11:39 am**

### **Other countries**

The following is a list of other countries that hold known patents by Tesla. The number following the country is the number of known patents in their records. This is not an exhaustive list. The total number may be incomplete and additional countries still may hold patents unknown.

Country	Argentina	Australia	Austria	Belgium	Brazil	Cuba	Denmark	Germany	France	India	Italy	Japan	Hungary
Number	1	5	4	21	2	1	3	19	26	1	11	1	7
Country	Mexico	New Zealand	Norway	Rhodesia	Russia	Switzerland	Sweden	Transvaal					
Number	1	1	3	1	4	4	4	1					

Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 04:12:11 am**

### **Theoretical and claimed inventions**

Dr. Tesla theorized about, planned to build, or claimed to have invented the following inventions.

- \* Wireless Transmission of Electricity: transmitted from power stations and received by antennas on houses and electric cars
- \* Electric Submarine

\* Teleforce  
\* Death ray: destructive energy transmitter he claimed to have built - "when unavoidable... may be used to destroy property and life." ---  
Tesla, 1915  
\* Mechanical Oscillator: compresses air until the air is a liquid  
\* Free Energy: Renewable electricity and heat tapped from the natural energy sources (not energy created from nothing)  
\* Earthquake Machine: a pocket-sized device that could shake a house apart with building waves of energy.  
\* Force Field: a magnetic field dome made of energy that will eventually be built big enough to protect a city from attack during wars  
\* Anti-Gravity Aircraft: electric aircraft  
\* Thought Camera: In 1933, Dr. Tesla theorized about a device that could photograph thoughts. "I expect to photograph thoughts... In 1893, while engaged in certain investigations, I became convinced that a definite image formed in thought, must by reflex action, produce a corresponding image on the retina, which might be read by a suitable apparatus. This brought me to my system of television which I announced at that time..."

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 04:12:51 am**

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(<http://upload.wikimedia.org/wikipedia/en/6/66/TeslaEffect.png>)

The Tesla effect[10][11][12] . A "world system" for "the transmission of electrical energy without wires" that depends upon electrical conductivity was proposed by Tesla.[13] Through longitudinal waves, an operator uses the Tesla effect in the wireless transfer of energy to a receiving device.

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 04:13:18 am**

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#### **Notes**

1. ^ a b Snezana Sarbo, Nikola Tesla's Patents, Sixth International Symposium Nikola Tesla, retrieved from August 9, 2007
2. ^ Cheney, 62
3. ^ U.S. Patent 462,418
4. ^ U.S. Patent 568,177. The patent office classifies the patent as superconductivity technology, specifically "Dynamoelectric; liquid coolant" (310/54) and "Specific Identifiable Device, Circuit, or System; Superconductive (e.g., cryogenic, etc.) device" (327/527)
5. ^ Ibib.
6. ^ boxa888, Utilization of Radiant Energy 1901 Nikola Tesla, My test, My setup 1, My setup 2, My setup 3, My test 2, My test 3, My test 4, My test 5, My test 6, My test 7, My test 8. youtube.com
7. ^ Cheney, pg. 236
8. ^ Sewall, Charles Henry, "Wireless telegraphy; its origins, development, inventions, and apparatus". New York, D. Van Nostrand company, 1903. LCCN 03026887 (ed. the books has 229 p. front. (map) illus., plates, ports., diagrs. 22 cm.)
9. ^ yurope.com patents
10. ^ Norrie, H. S., "Induction Coils: How to make, use, and repair them". Norman H. Schneider, 1907, New York. 4th edition.
11. ^ The Electrical Experimenter, January 1919. pg. 615
12. ^ Tesla: Man Out of Time By Margaret Cheney. Page 174.
13. ^ "The Transmission of Electrical Energy Without Wires," Electrical World, March 5, 1904

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Title: **Re: Nikola Tesla**

Post by: **Lynn Rotanno** on **June 28, 2009, 04:42:58 am**

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#### **Notes**

1. ^ Tesla Society. Commemoration
2. ^ BBC News "Electrical pioneer Tesla honoured"
3. ^ Nikola Tesla, genije koji je obasjao svet, produced by Ljubo Vujovic, presented by Time Warner and RCN: quoted also in Ogledalo journal, July 2008
4. ^ Serbian Unity Congress | 150 Years of Nikola Tesla
5. ^ Harnessing the Wheelwork of Nature: Tesla's Science of Energy by Thomas Valone
6. ^ Childress, David Hatcher (ed.) (2000). The Tesla Papers: Nikola Tesla on Free Energy & Wireless Transmission of Power. Kempton, IL: Adventures Unlimited Press. ISBN 0932813860.
7. ^ Robert Lomas (1999-08-21). "Spark of genius". Independent Magazine. [http://www.robertlomas.com/Tesla/Independent\\_Article.html](http://www.robertlomas.com/Tesla/Independent_Article.html). Retrieved on 2008-07-29.
8. ^ Cheney, Margaret, "Tesla: Man Out of Time", 1979. ISBN 0743215362. Front cover flap
9. ^ U.S. Supreme Court, "Marconi Wireless Telegraph co. of America v. United States". 320 U.S. 1. Nos. 369, 373. Argued 9-12 April 1943. Decided 21 June 1943.
10. ^ Obrad Mićov Samardžić, "Porijeklo Samardžića i ostalih bratstava roda Orlovića", Mostar 1992. ISBN 86-82271-53-2.
11. ^ Seifer, "Wizard" p. 7
12. ^ a b Margaret Cheney, Robert Uth, and Jim Glenn, "Tesla, Master of Lightning". Barnes & Noble Publishing, 1999. ISBN 0760710058.
13. ^ Walker, E. H. (1900). Leaders of the 19th century with some noted characters of earlier times, their efforts and achievements in advancing human progress vividly portrayed for the guidance of present and future generations. Chicago: A.B. Kuhlman Co., p, 474.
14. ^ Wysock, W.C.; J.F. Corum, J.M. Hardesty and K.L. Corum (22 October 2001). "Who Was The Real Dr. Nikola Tesla? (A Look At His Professional Credentials)" (PDF). Antenna Measurement Techniques Association, posterpage. <http://www.ttr.com/Who%20Was%20Dr%20Tesla.pdf>.
15. ^ "The Book of New York: Forty Years' Recollections of the American Metropolis" says he matriculated 4 degrees (physics, mathematics, mechanical engineering and electrical engineering)
16. ^ Harper's Encyclopædia of United States History from 458 A.D. to 1906. Harper & brothers 1905. Page 52.
17. ^ Nikola Tesla: the European Years, D. Mrkich
18. ^ Wohinz, Josef W. (16 May 2006). "Nikola Tesla und Graz". Technischen Universität Graz. [http://www.presse.tugraz.at/pressemitteilungen/2006/16.05.2006\\_graz.htm](http://www.presse.tugraz.at/pressemitteilungen/2006/16.05.2006_graz.htm). Retrieved on 2006-01-29.
19. ^ Wohinz, Josef W. (Ed,) (2006). Nikola Tesla und die Technik in Graz. Graz, Austria: Verlag der Technischen Universität Graz. pp. p. 16. ISBN 3-902465-39-5; ISBN 978-3-902465-39-9 ..
20. ^ Kulishich, Kosta (27 August 1931). "Tesla Nearly Missed His Career as Inventor: College Roommate Tells". Newark News. . Cited in

Seifer, Marc, *The Life and Times of Nikola Tesla*, 1996

21. ^ Seifer, Marc (1996). *Wizard: The Life and Times of Nikola Tesla; Biography of a Genius*. Secaucus, NJ: Carol Publishing Group. ISBN.
22. ^ a b c d e f g h i Cheney, Margaret (2001) [1979]. *Tesla: Man Out of Time*. Simon and Schuster. ISBN 0743215362. <http://books.google.com/books?vid=ISBN0743215362&id=ti2Jt7XarzMC>. Retrieved on 2007-06-17.
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