

Chapter 1 : Thomas Alva Edison - Engineering and Technology History Wiki

Thomas Edison, in full Thomas Alva Edison, (born February 11, , Milan, Ohio, U.S.â€”died October 18, , West Orange, New Jersey), American inventor who, singly or jointly, held a world record 1, patents. In addition, he created the world's first industrial research laboratory.

Thomas Alva Edison The American inventor Thomas Alva Edison held hundreds of patents, most for electrical devices and electric light and power. Although the phonograph and incandescent lamp are best known, perhaps his greatest invention was organized research. Thomas Edison was born in Milan, Ohio, on Feb. Edison spent 3 months in school, then was taught by his mother. At the age of 12 he sold fruit, candy, and papers on the Grand Trunk Railroad. In , using his small handpress in a baggage car, he wrote and printed the Grand Trunk Herald, which was circulated to railroad employees. That year he became a telegraph operator, taught by the father of a child whose life Edison had saved. Exempt from military service because of deafness, he was a tramp telegrapher until he joined Western Union Telegraph Company in Boston in His first patent was for an electric vote recorder. In , as a partner in a New York electrical firm, he perfected the stock ticker and sold it. This money, in addition to that from his share of the partnership, provided funds for his own factory in Newark, N. Edison hired technicians to collaborate on inventions; he wanted an "invention factory. From to Edison invented many telegraphic improvements: He worked with Christopher Sholes, "father of the typewriter," in to improve the typing machine. Edison claimed he made 12 typewriters at Newark about The Remington Company bought his interests. Again he pooled scientific talent, and within 6 years he had more than patents. The electric pen produced stencils to make copies. From a manually operated instrument making impressions on metal foil and replaying sounds, it became a motor-driven machine playing cylindrical wax records by By he had more than 80 patents on it. The Victor Company developed from his patents. Alexander Graham Bell impressed sound tracks on cylindrical shellac records; Berliner invented disk records. Incandescent Lamp To research incandescence, Edison and others, including J. Morgan, organized the Edison Electric Light Company in Later it became the General Electric Company. Edison made the first practical incandescent lamp in , and it was patented the following year. After months of testing metal filaments, Edison and his staff examined 6, organic fibers from around the world and decided that Japanese bamboo was best. Mass production soon made the lamps, although low-priced, profitable. Within 4 months the station was lighting more than 5, lamps for customers, and the demand for lamps exceeded supply. By it supplied current to 20, lamps, mainly in office buildings, and to motors, fans, printing presses, and heating appliances. Many towns and cities installed central stations. Increased use of electricity led to Edison-base sockets, junction boxes, safety fuses, underground conduits, meters, and the three-wire system. Jumbo dynamos, with drum-wound armatures, could maintain volts with 90 percent efficiency. The three-wire system, first installed in Sunbury, Pa. In Edison made a significant discovery in pure science, the Edison effectâ€”electrons flowed from incandescent filaments. With a metal-plate insert, the lamp could serve as a valve, admitting only negative electricity. Although "etheric force" had been recognized in and the Edison effect was patented in , the phenomenon was little known outside the Edison laboratory. At this time existence of electrons was not generally accepted. This "force" underlies radio broadcasting, long-distance telephony, sound pictures, television, electric eyes, x-rays, high-frequency surgery, and electronic musical instruments. In Edison patented a method to transmit telegraphic "aerial" signals, which worked over short distances, and later sold this "wireless" patent to Guglielmo Marconi. Various inventions included a method to make plate glass, a magnetic ore separator, compressing dies, composition brick, a cement process, an all-concrete house, an electric locomotive patented , a fluoroscope, a nickel-iron battery, and motion pictures. Edison refused to patent the fluoroscope, so that doctors could use it freely; but he patented the first fluorescent lamp in The Edison battery, finally perfected in , was a superior storage battery with an alkaline electrolyte. A young assistant, in order to make the first Edison movies, in built a small laboratory called the "Black Maria,"â€”a shed, painted black inside and out, that revolved on a base to follow the sun and kept the actors illuminated. The kinetoscope projector of showed the films. The first commercial movie theater, a peepshow, opened in

New York in 1895. A coin put into a slot activated the kinetoscope inside the box. Acquiring and improving the projector of Thomas Armat in 1891, Edison marketed it as the Vitascope. Movie Production The Edison Company produced over 1,000 movies. Synchronizing movies with the phonograph in 1895, Edison laid the basis for talking pictures. In his cinemaphone appeared, adjusting film speed to phonograph speed. In his kinetophone projected talking pictures: Edison produced several "talkies." That year Edison invented the telescribe, which combined features of the telephone and dictating phonograph. Navy Consulting Board and contributed 45 inventions, including substitutes for previously imported chemicals especially carbolic acid, or phenol, defensive instruments against U-boats, a ship-telephone system, an underwater searchlight, smoke screen machines, antitorpedo nets, turbine projectile heads, collision mats, navigating equipment, and methods of aiming and firing naval guns. By crossbreeding goldenrod, he developed a strain yielding 12 percent latex, and in 1906 he received his last patent, for this process. The Man Himself To raise money, Edison dramatized himself by careless dress, clowning for reporters, and playing the role of homespun sage with aphorisms like "Genius is 1 percent inspiration and 99 percent perspiration" and "Discovery is not invention. As a world symbol of Yankee ingenuity, he looked and acted the part. Edison had more than 10,000 books at home and masses of printed materials at the laboratory. Some 25,000 notebooks contained his research records, ideas, hunches, and mistakes. Supposedly, his great shortcoming was lack of interest in anything not utilitarian; yet he loved to read Shakespeare and Thomas Paine. Edison died in West Orange, N. J. The laboratory buildings and equipment associated with his career are preserved in Greenfield Village, Detroit, Mich. Biographies emphasizing his inventions include William Adams Simonds, *Edison: Gordon Garbedian*, *Thomas Alva Edison: Builder of Civilization*. See also Charles Singer and others, eds. *The Late Nineteenth Century*

Chapter 2 : Thomas A. Edison Quotes - BrainyQuote

Thomas Alva Edison (February 11, - October 18,) was an American inventor and businessman, who has been described as America's greatest inventor. He is credited with developing many devices in fields such as electric power generation, mass communication, sound recording, and motion pictures.

When Edison was seven years old, he moved with his family to Port Huron , Michigan. Edison started school late because of an illness. Three months later, Edison was removed from school, because he could not pay attention to his teacher. His mother, who was a teacher in Canada , taught Edison at home. When Edison was twelve years old, he contracted scarlet fever. The effects of the fever, as well as getting picked up by the ears by a train conductor, caused Edison to become completely deaf in his left ear, and 80 percent deaf in the other. He learned Morse code of the telegraph , and began a job as a "brass pounder" telegraph operator. At age sixteen, Edison invented his first invention, which was called an "automatic repeater. He worked twelve hours a day, six days a week, and continued to "moonlight" on his own projects. Within six months, he had applied for and received his first patent for an electric vote recorder. It made the voting process faster but he could not find buyers. Then, Edison moved to New York and began to work for a company fixing their machines. At night, he continued to work on his projects. In Edison used the money from his inventions to start his own laboratory in New Jersey. In , Edison invented the phonograph , the first machine that could record and play sound. The phonograph made him internationally famous. In , Edison made a light bulb that lasted longer. Another invention, the electric power distribution network, lasted even longer. Personal life He married Mary Stilwell in He had three children in that marriage: Mary Stilwell died in Thomas Edison bought some land in Florida and built a house. When he was thirty-nine, Edison married his second wife, Mina Miller, who was He had 3 children in that marriage: Issued January 27, Extravagant displays of electric lights quickly became a feature of public events, as in this picture from the Tennessee Centennial Exposition. Share of the Edison Storage Battery Company, issued October From Left to Right: Edison in All content from Kiddle encyclopedia articles including the article images and facts can be freely used under Attribution-ShareAlike license, unless stated otherwise.

Chapter 3 : Thomas Edison - HISTORY

Thomas Alva Edison was born on February 11, , in Milan, Ohio. He was the seventh and last child born to Samuel Edison Jr. and Nancy Elliott Edison, and would be one of four to survive to.

The voice of Thomas Alva Edison, with his phonograph, Birthplace Stories One of the most widely heard stories on the Internet is that Thomas Alva Edison was born in the town of Sombrerete, a municipality of the same name, in the State of Zacatecas , Mexico, on February 18, " and not in Milan, Ohio, USA " on February 11, , as is generally claimed. At that time there were three families with the surname Alva: In Sombrerete , because of their Mexican pride, they placed a metal plaque, with bronze letters, located on Calle Hidalgo No. Part of this theory is that Alva Edison was posing as an American, who left this country for the north when she was about to turn 20 for the sake of convenience and naturalization. But at the end of two days of searching, they gave up on the fact that there was no connection. For some time the legend stalled, until recently a group of Mexican researchers decided to revisit the birth books of the time, discovering that the pages of the books had been ripped out according to the alphabetical order of the Edison family. It is not known whether the previous researchers had ripped out these leaves. The truth is that to date there is still nothing concrete about their nationality. Madero was that he installed the electric light in Parras de la Fuente, the first place in Latin America to have this type of energy. When he reached the height of his fame as an inventor, his fellow countrymen of Sombrerete, in testimony of admiration for him, as well as an explicable civic pride, placed a metal plaque, with bronze letters, outside the door of the house where Edison was born, located in the street Hidalgo No. The photographs of both the house and the plaque just cited, appear in a photogravure attached to the Bulletin referred to above. The house in Sombrerete, Zac. The plaque was removed by the owner of the house because he claimed that all tourists wanted to enter his house. Sombrerete, Zacatecas Mexico Commemorative plaque placed on the house, currently removed by the owners Candelaria Fair of Sombrerete Zacatecas One of the oldest temples that Sombrerete has is the Chapel of Candelaria. It is considered that it was the first sacred construction that this town of Zacatecas had. It was built to honor a wooden figure and stew, made in Seville, Spain. The Candelaria Chapel has a stone altar and a remarkable colonial style. This Magical Town became an important mining settlement producing gold, silver, lead, tin, and mercury. The exploitation of its veins gave life to one of the most picturesque villages and rich in traditions of New Spain, which are still preserved to this day.

Chapter 4 : Thomas Edison - Simple English Wikipedia, the free encyclopedia

Who Was Thomas Edison? Thomas Alva Edison (February 11, to October 18,) was an American inventor who is considered one of America's leading businessmen.

He was the seventh and last child of Samuel Ogden Edison Jr. By contrast, Samuel Jr. Once across the border, he found his way to Milan, Ohio. His patrilineal family line was Dutch by way of New Jersey; the surname had originally been "Edeson. The cause of his deafness has been attributed to a bout of scarlet fever during childhood and recurring untreated middle-ear infections. Around the middle of his career, Edison attributed the hearing impairment to being struck on the ears by a train conductor when his chemical laboratory in a boxcar caught fire and he was thrown off the train in Smiths Creek, Michigan , along with his apparatus and chemicals. In his later years, he modified the story to say the injury occurred when the conductor, in helping him onto a moving train, lifted him by the ears. He became a telegraph operator after he saved three-year-old Jimmie MacKenzie from being struck by a runaway train. MacKenzie of Mount Clemens, Michigan , was so grateful that he trained Edison as a telegraph operator. He also studied qualitative analysis and conducted chemical experiments on the train until he left the job. These talents eventually led him to found 14 companies, including General Electric , still one of the largest publicly traded companies in the world. Edison requested the night shift, which allowed him plenty of time to spend at his two favorite pastimes—reading and experimenting. Eventually, the latter pre-occupation cost him his job. One night in , he was working with a lead—acid battery when he spilled sulfuric acid onto the floor. The next morning Edison was fired. His first patent was for the electric vote recorder, U. Patent 90, , which was granted on June 1, Edison was legally attributed with most of the inventions produced there, though many employees carried out research and development under his direction. His staff was generally told to carry out his directions in conducting research, and he drove them hard to produce results. William Joseph Hammer , a consulting electrical engineer, started working for Edison and began his duties as a laboratory assistant in December He assisted in experiments on the telephone, phonograph, electric railway, iron ore separator , electric lighting , and other developing inventions. However, Hammer worked primarily on the incandescent electric lamp and was put in charge of tests and records on that device see Hammer Historical Collection of Incandescent Electric Lamps. In , he was appointed chief engineer of the Edison Lamp Works. According to Edison, Hammer was "a pioneer of incandescent electric lighting". Sprague , a competent mathematician and former naval officer , was recruited by Edward H. Johnson and joined the Edison organization in About a dozen were design patents , which protect an ornamental design for up to a year period. As in most patents, the inventions he described were improvements over prior art. The phonograph patent, in contrast, was unprecedented as describing the first device to record and reproduce sounds. Edison said he wanted the lab to have "a stock of almost every conceivable material". With Menlo Park, Edison had created the first industrial laboratory concerned with creating knowledge and then controlling its application. Problems playing this file? Edison began his career as an inventor in Newark, New Jersey , with the automatic repeater and his other improved telegraphic devices, but the invention that first gained him wider notice was the phonograph in Despite its limited sound quality and that the recordings could be played only a few times, the phonograph made Edison a celebrity. Joseph Henry , president of the National Academy of Sciences and one of the most renowned electrical scientists in the US, described Edison as "the most ingenious inventor in this country Carbon telephone transmitter In , Edison began work to improve the microphone for telephones at that time called a "transmitter" by developing a carbon microphone , which consists of two metal plates separated by granules of carbon that would change resistance with the pressure of sound waves. A steady direct current is passed between the plates through the granules and the varying resistance results in a modulation of the current, creating a varying electric current that reproduces the varying pressure of the sound wave. Up to that point, microphones, such as the ones developed by Johann Philipp Reis and Alexander Graham Bell , worked by generating a weak current. The carbon microphone works by modulating a direct current and, subsequently, using a transformer to transfer the signal so generated to the telephone line. Edison was one of many inventors working on the problem of

creating a usable microphone for telephony by having it modulate an electrical current passed through it. This type was put in use in [39] and was used in all telephones along with the Bell receiver until the s. Electric light Main article: Others who developed early and commercially impractical incandescent electric lamps included Humphry Davy , James Bowman Lindsay , Moses G. Farmer , [42] William E. Some of these early bulbs had such flaws as an extremely short life, high expense to produce, and high electric current drawn, making them difficult to apply on a large scale commercially. This lamp must have high resistance and use relatively low voltage around volts. Issued January 27, Morgan , Spencer Trask , [52] and the members of the Vanderbilt family. Edison made the first public demonstration of his incandescent light bulb on December 31, , in Menlo Park. It was during this time that he said: The Edison equipment was removed from Columbia in Latimer had received a patent in January for the "Process of Manufacturing Carbons", an improved method for the production of carbon filaments for light bulbs. Latimer worked as an engineer, a draftsman and an expert witness in patent litigation on electric lights. Sawyer and was, therefore, invalid. The DC supply system provided electricity supplies to street lamps and several private dwellings within a short distance of the station. On January 19, , the first standardized incandescent electric lighting system employing overhead wires began service in Roselle, New Jersey. War of currents Main article: War of Currents Extravagant displays of electric lights quickly became a feature of public events, as in this picture from the Tennessee Centennial Exposition. As Edison expanded his direct current DC power delivery system, he received stiff competition from companies installing alternating current AC systems. From the early s AC arc lighting systems for streets and large spaces had been an expanding business in the US. With the development of transformers in Europe and by Westinghouse Electric in the US in "â€", it became possible to transmit AC long distances over thinner and cheaper wires, and "step down" the voltage at the destination for distribution to users. Small cities and rural areas could not afford an Edison style system at all, leaving a large part of the market without electrical service. AC companies expanded into this gap. Edison expressed views that AC was unworkable and the high voltages used were dangerous. As George Westinghouse installed his first AC systems in , Thomas Edison struck out personally against his chief rival stating, "Just as certain as death, Westinghouse will kill a customer within six months after he puts in a system of any size. He has got a new thing and it will require a great deal of experimenting to get it working practically. One notion is that the inventor could not grasp the more abstract theories behind AC and was trying to avoid developing a system he did not understand. Edison also appeared to have been worried about the high voltage from misinstalled AC systems killing customers and hurting the sales of electric power systems in general. This turned into a media frenzy against high voltage alternating current and the seemingly greedy and callous lighting companies that used it. Brown in a propaganda campaign, aiding Brown in the public electrocution of animals with AC, and supported legislation to control and severely limit AC installations and voltages to the point of making it an ineffective power delivery system in what was now being referred to as a "battle of currents". That year, the financier J. General Electric now controlled three-quarters of the US electrical business and would compete with Westinghouse for the AC market. Edison and Mina spent many winters at their home in Fort Myers, and Edison tried to find a domestic source of natural rubber. Initially, only Ford and Firestone were to contribute funds to the project while Edison did all the research. Dally made himself an enthusiastic human guinea pig for the fluoroscopy project and was exposed to a poisonous dose of radiation. He later died of injuries related to the exposure. In , a shaken Edison said: His impetus for its creation was the desire to measure the heat from the solar corona during the total Solar eclipse of July 29, Telegraph improvements This section possibly contains original research. Please improve it by verifying the claims made and adding inline citations. Statements consisting only of original research should be removed. With knowledge gained from years of working as a telegraph operator, he learned the basics of electricity. This allowed him to make his early fortune with the stock ticker , the first electricity-based broadcast system. On August 9, , Edison received a patent for a two-way telegraph. Edison was also granted a patent for the motion picture camera or "Kinetograph". He did the electromechanical design while his employee W. Dickson , a photographer, worked on the photographic and optical development. Much of the credit for the invention belongs to Dickson. This device was installed in penny arcades, where people could watch short, simple films. The kinetograph and kinoscope were both first

publicly exhibited May 20, Later, he exhibited motion pictures with voice soundtrack on cylinder recordings, mechanically synchronized with the film. Maguire and Joseph D. Baucus a dozen machines. Bush placed from October 17, , the first kinetoscopes in London. In the last three months of , the Continental Commerce Company sold hundreds of kinetoscopes in Europe i. The first kinetoscopes arrived in Belgium at the Fairs in early The main investors in this company were Belgian industrialists. The businessman Ladislas-Victor Lewitzki, living in London but active in Belgium and France, took the initiative in starting this business. In , he also became a shareholder of the Biograph and Mutoscope Company for France.

Thomas Alva Edison was the most prolific inventor in American history. He amassed a record 1, patents covering key innovations and minor improvements in wide range of fields, including telecommunications, electric power, sound recording, motion pictures, primary and storage batteries, and mining and cement technology.

October photograph of original "Edison Pioneers" who worked with Edison early-on. Two Edison chandeliers with original first form " Wire Terminal Base" sockets and incandescent light bulbs are seen behind group. Francis Jehl, Frank Wardlaw and C. Howell and John W. Stock Ticker Photo credit: First form " Wire Terminal Base" socket and bulb as used on the S. Columbia - first commercial installation of Edison electric lighting system; Second form " Wire Terminal Base" socket and bulb; " Original Screw Base" socket and bulb and the " Improved Screw Base" socket and light bulb. Table card obverse reads: Event occurred as Tesla Polyphase A. Table card verso bearing printed inscription reading: Provenance is estate of Thomas A. His inventions, coupled with a business vision focused on commercial development, gave rise to three major industries: Edison was born on 11 February in Milan, Ohio, the last of seven children. Like many children during that era, Edison had little formal education. During his early youth his mother taught him at home. As he grew older he became more self-directed in his reading and sought out scientific books and technical journals. Born to modest means, Edison began his working life early. At age thirteen he took a job as a newsboy on the local railroad. At the age of sixteen, acting on his interest in telegraphy, he found full-time work as a telegraph operator. In Edison settled in Boston and began his transformation from itinerant telegrapher to world-class inventor. In that year Edison received his first patent—“an electric vote recorder intended for use by elected bodies to speed the voting process. For the rest of his career Edison focused on inventions that had strong commercial appeal, and therefore the potential of financial reward. In , Edison moved to New York City, and it was there that he made an improved stock ticker. At Menlo Park , Edison created the first industrial research laboratory, which contained equipment and materials necessary to work on any idea that might pique his interest. This complex consisted of five buildings which housed, among other things, a power plant, machine shops, a physics lab, a chemistry lab, and a metallurgy lab. Over the years, factories to manufacture Edison inventions were built around the laboratory. At its peak during World War I, the complex covered more than twenty acres and employed 10, people. His invention found a receptive public and Edison became internationally famous. His companies manufactured both the phonograph as well as the wax cylinders and, later, the disks, that the phonograph played. In one of the rare cases of Edison shortsightedness, he refused to acknowledge the growing popularity of disc records in the early s. While other companies, such as Columbia, made both discs and cylinders and let consumers make the choice, Edison stuck with the cylinder far too long. Eventually, his declining market share forced him to introduce a disc record in . The second of the Edison-created industries was that of electric power generation and distribution. Edison developed practical electrical lighting and, in essence, ushered in the electrical age. Pearl Street Station , which opened in lower Manhattan in September featured safe and reliable central power generation, efficient distribution, and a successful end use i. The one-square mile lit up by the Pearl Street station demonstrated the potential of electric power. Edison Movie Projector Black Maria Movie Studio In the s, Edison began working on motion picture technology, and in the process created a third industry. Like the electric light and phonograph before it, Edison developed a complete system that encompassed everything needed to both film and show motion pictures. A savvy publicist, Edison carefully cultivated a public image of eccentric genius combined with common man. By the dawn of the twentieth century Edison had become an icon of American ingenuity. The spiritual benefits of his contributions to humanity continue to live. His genius, vision, patience, persistence, industry, and widely diversified talents, which brought to fruition many of his conceptions, have contributed greatly to the comfort, convenience, and happiness of mankind, and his achievements constitute a great incentive and inspiration to those who follow. In particular, his invention of the incandescent electric lamp and his conception, more than 50 years ago, of the combination of a central generating station with a suitable distributing system for electrical energy, firmly establish him as the founder of the electric lighting

industry of the world. He was the outstanding world leader in the group of inventors, scientists, and engineers whose achievements in technology have produced great social and economic benefits, including the employment, in useful occupations throughout the civilized world, of tens of thousands of men and women. He was respected and admired by his associates who cherish their memory of his ability, simplicity, and other personal characteristics. Edison was, in , one of the signers of the call for the organization meeting of the American Institute of Electrical Engineers, and he was elected a vice-president at the first election of officers; later he was elected an Honorary Member. His achievements caused a group of his associates and friends to establish the Edison Medal, which is now awarded annually by this Institute. Westinghouse Corporation Tesla based Polyphase A.

Chapter 6 : Thomas Edison Licensing and Resources | USA | Charles Edison Fund

Thomas Alva Edison was born on February 11, in Milan, Ohio; the seventh and last child of Samuel and Nancy Edison. When Edison was seven his family moved to Port Huron, Michigan. Edison lived here until he struck out on his own at the age of sixteen.

When Edison was seven years old, he moved with his family to Port Huron , Michigan. Edison started school late because of an illness. Three months later, Edison was removed from school, because he could not pay attention to his teacher. His mother, who was a teacher in Canada , taught Edison at home. When Edison was twelve years old, he contracted scarlet fever. The effects of the fever, as well as getting picked up by the ears by a train conductor, caused Edison to become completely deaf in his left ear, and 80 percent deaf in the other. He learned Morse code of the telegraph , and began a job as a "brass pounder" telegraph operator. At age sixteen, Edison made his first invention , which was called an "automatic repeater. Career[change change source] In , Edison moved East and began to work for the Western Union Company in Boston, Massachusetts as a telegraph operator. He worked twelve hours a day, six days a week, and continued to "moonlight" on his own projects. Within six months, he had applied for and received his first patent for an electric vote recorder. It made the voting process faster but he could not find buyers. Then, Edison moved to New York and began to work for a company fixing their machines. At night, he continued to work on his projects. In Edison used the money from his inventions to start his own laboratory in Menlo Park, New Jersey. In , Edison invented the phonograph , the first machine that could record and play sound. The phonograph made him internationally famous. In , Edison made a light bulb that lasted longer. Another invention, the electric power distribution network, lasted even longer. Personal life[change change source] He married Mary Stilwell in He had three children in that marriage: Mary Stilwell died in Thomas Edison bought some land in Florida and built a house. When he was thirty-nine, Edison married his second wife, Mina Miller, who was He had 3 children in that marriage:

Chapter 7 : Thomas Edison Facts for Kids

Thomas Alva Edison. The American inventor Thomas Alva Edison () held hundreds of patents, most for electrical devices and electric light and power. Although the phonograph and incandescent lamp are best known, perhaps his greatest invention was organized research.

Thomas Edison was more responsible than any one else for creating the modern world. Accordingly, he was the most influential figure of the millennium. Electricity And Man Surprisingly, little "Al" Edison, who was the last of seven children in his family, did not learn to talk until he was almost four years of age. Immediately thereafter, he began pleading with every adult he met to explain the workings of just about everything he encountered. Actually, he was born -on Feb. In , his family moved to the vibrant city of Port Huron, Michigan, which ultimately surpassed the commercial preeminence of both Milan and Odessa. If modern psychology had existed back then, Tom would have probably been deemed a victim of ADHD attention deficit hyperactivity disorder and proscribed a hefty dose of the "miracle drug" Ritalin. Instead, when his beloved mother - whom he recalled "was the making of me And always made me feel I had someone to live for and must not disappoint. After the above incident, she commenced teaching her favorite son the "Three Rs" and the Bible. Meanwhile, his rather "worldly" and roguish father, Samuel, encouraged him to read the great classics, giving him a ten cents reward for each one he completed. Tom especially enjoyed reading and reciting poetry. Indeed, his favorite lines - which he endlessly chanted to himself and any within hearing distance - came from its 9th stanza: The path to glory leads but to the grave. Unfortunately, this experience had some negative affects on the highly impressionable boy. In fact, they very much helped him sharpen his own free wheeling style of clear thinking, proving all things to himself through his own method of objective examination and experimentation. All the while he was cultivated a strong sense of perseverance, readily expending whatever amount of perspiration needed to overcome challenges. This was a characteristic that he later noted was contrary to the way most people respond to stress and strain on their body. Because this was considerably more than enough to provide for his own support, he had a good deal of extra income, most of which went towards outfitting the chemical laboratory he had set up in the basement of his home. But hen his usually patient and tolerant mother finally complained about the odors and danger of all the "poisons" he was amassing, he transferred most of them to a locked room in the basement and put the remainder in his locker room on the train. One day, while traversing a bumpy section of track, the train lurched, causing a stick of phosphorous to roll onto the floor and ignite. Within moments, the baggage car caught fire. The conductor was so angry, he severely chastised the boy and struck him with a powerful blow on the side of his head. Poignantly, he once stated that the worst thing about this condition was that he was unable to enjoy the beautiful sounds of singing birds. Tom leaped to action. By age 15, Tom had pretty much mastered the basics of this fascinating new career and obtained a job as a replacement for one of the thousands of "brass pounders" telegraph operators who had gone off to serve in the Civil War. Called an "automatic repeater," it transmitted telegraph signals between unmanned stations, allowing virtually anyone to easily and accurately translate code at their own speed and convenience. Curiously, he never patented the initial version of this idea. Sadly, he found his parents in an even worse predicament. Shortly thereafter, Tom accepted the suggestion of a fellow "lightening slinger" named Billy Adams to come East and apply for a permanent job as a telegrapher with the relatively prestigious Western Union Company in Boston. His willingness to travel over a thousand miles from home was at least partly influenced by the fact that he had been given a free rail ticket by the local street railway company for some repairs he had done for them. The most important factor, however, was the fact that Boston was considered to be "the hub of the scientific, educational, and cultural universe at this time. However, instead of being a haven for the thousands of young "tekkies" - who communicate with each other in computerese and internet code of today - it was the home of scores of young telegraphers who anxiously stayed abreast of the emerging age of electricity and the telephone etc. During these latter days of the "age of the telegraph," Tom toiled 12 hours a day and six days a week for Western Union. A beautifully constructed electric vote-recording machine, this first "legitimate" invention he was to come up with turned out to be a disaster. When he tried to

market it to members of the Massachusetts Legislature, they thoroughly denigrated it, claiming "its speed in tallying votes would disrupt the delicate political status-quo. Even though his remarkable invention allowed each voter to instantly cast his vote from his seat - exactly as it was supposed to do - he realized his idea was so far ahead of its time it was completely devoid of any immediate sales appeal. Because of his continuing desperate need for money, Tom now made a critically significant adjustment in his, heretofore, relatively naive outlook on the world of business and marketing Institute of Technology in and the ideas of several associates on the state-of-the-art of "multiplexing" telegraph signals. This theory and related experimental quests involved the transmission of electrical impulses at different frequencies over telegraph wires, producing horn-like simulations of the human voice and even crude images the first internet? Not surprisingly, Alexander Graham Bell, who was also living in Boston at the time, was equally fascinated by this exciting new aspect of communication science. A device that exploits the fact that electromagnetism and the number and direction of wire windings associated with a connection between telegraph keys can influence the current that flows between them, and greatly facilitate two-way telegraphic communication, it powerfully intrigued Edison Bredding and Edison, of course wound up getting absolutely nothing from the venture. Unlike Edison, Bredding was an extremely modest individual with little taste for aggrandizement and self promotion Luckily, since he had been sleeping in the basement of the building for a few days - and doing quite a bit of snooping around - he already had a pretty good idea of what the device was supposed to do. This was not only more than what his pal Benjamin Bredding was making back in Boston but twice the going rate for a top electrician in New York City. Later in life, Edison recalled that the incident was more euphoric than anything he ever experienced in his life because it made him feel as though he had been "suddenly delivered out of abject poverty and into prosperity. Convinced that no bank would honor the large check he was given for it, which was the first "real" money he had ever received for an invention, young Edison walked around for hours in a stupor, staring at it in amazement. Fearful that someone would steal it, he laid the cash out on his bed and stayed up all night, counting it over and over in disbelief. The next day a wise friend told him to deposit it in a bank forthwith and to just forget about it for a while. I am now in a position to give you some cash Write and say how much Give mother anything she wants Interestingly, at one point during this intense period, Edison was as close to inventing the telephone as Bell was to inventing the phonograph. Nevertheless, shortly after Edison moved his laboratory to Menlo Park, N. See " Greatest Achievement? An amazing enterprise, its significance is as much misunderstood as his work in developing the first practical centralized power system. At the turn-of-the-century, Edison invented the first practical dictaphone, mimeograph, and storage battery. After creating the "kinetoscope" and the first silent film in , he went on to introduce The Great Train Robbery in , which was a ten minute clip that was his first attempt to blend audio with silent moving images to produce "talking pictures. Government to focus his genius upon creating defensive devices for submarines and ships. During this time, he also perfected a number of important inventions relating to the enhanced use of rubber, concrete, and ethanol. And due to the continuing demands of his career, there were still relatively long periods when he spent a shockingly small amount of time with his family. Thomas Edison died At 9 P. He was 84 years of age. Shortly before passing away, he awoke from a coma and quietly whispered to his very religious and faithful wife Mina, who had been keeping a vigil all night by his side: In his existing laboratory and home in West Orange, N. All rights registered and reserved. Absolutely no part of this publication may be reproduced or distributed in any form - or stored by any means in a database or retrieval system - without the prior written and express permission of the author.

Chapter 8 : Edison Biography

Welcome to Edison's Homepage "He led no armies into battle, he conquered no countries, and he enslaved no peoples. Nonetheless, he exerted a degree of power the magnitude of which no warrior ever dreamed.

When Edison was seven his family moved to Port Huron, Michigan. Edison lived here until he struck out on his own at the age of sixteen. Edison had very little formal education as a child, attending school only for a few months. He was taught reading, writing, and arithmetic by his mother, but was always a very curious child and taught himself much by reading on his own. This belief in self-improvement remained throughout his life. Edison began working at an early age, as most boys did at the time. At thirteen he took a job as a newsboy, selling newspapers and candy on the local railroad that ran through Port Huron to Detroit. He seems to have spent much of his free time reading scientific, and technical books, and also had the opportunity at this time to learn how to operate a telegraph. By the time he was sixteen, Edison was proficient enough to work as a telegrapher full time. The development of the telegraph was the first step in the communication revolution, and the telegraph industry expanded rapidly in the second half of the 19th century. This rapid growth gave Edison and others like him a chance to travel, see the country, and gain experience. Edison worked in a number of cities throughout the United States before arriving in Boston in 1876. Here Edison began to change his profession from telegrapher to inventor. He received his first patent on an electric vote recorder, a device intended for use by elected bodies such as Congress to speed the voting process. This invention was a commercial failure. Edison resolved that in the future he would only invent things that he was certain the public would want. Edison moved to New York City in 1877. He continued to work on inventions related to the telegraph, and developed his first successful invention, an improved stock ticker called the "Universal Stock Printer". This gave Edison the money he needed to set up his first small laboratory and manufacturing facility in Newark, New Jersey in 1878. During the next five years, Edison worked in Newark inventing and manufacturing devices that greatly improved the speed and efficiency of the telegraph. He also found time to get married to Mary Stilwell and start a family. In 1880 Edison sold all his Newark manufacturing concerns and moved his family and staff of assistants to the small village of Menlo Park, twenty-five miles southwest of New York City. Edison established a new facility containing all the equipment necessary to work on any invention. Here Edison began to change the world. The first machine that could record and reproduce sound created a sensation and brought Edison international fame. Edison toured the country with the tin foil phonograph, and was invited to the White House to demonstrate it to President Rutherford B. Hayes in April 1878. Edison next undertook his greatest challenge, the development of a practical incandescent, electric light. The idea of electric lighting was not new, and a number of people had worked on, and even developed forms of electric lighting. But up to that time, nothing had been developed that was remotely practical for home use. After one and a half years of work, success was achieved when an incandescent lamp with a filament of carbonized sewing thread burned for thirteen and a half hours. Edison spent the next several years creating the electric industry. In September 1882, the first commercial power station, located on Pearl Street in lower Manhattan, went into operation providing light and power to customers in a one square mile area; the electric age had begun. An early sketch from a laboratory notebook of an electric lightbulb. NPS Photo The success of his electric light brought Edison to new heights of fame and wealth, as electricity spread around the world. Despite the use of Edison in the company title however, Edison never controlled this company. The tremendous amount of capital needed to develop the incandescent lighting industry had necessitated the involvement of investment bankers such as J.P. Morgan. When Edison General Electric merged with its leading competitor Thompson-Houston in 1889, Edison was dropped from the name, and the company became simply General Electric. A year later, while vacationing at a friend's house in New England, Edison met Mina Miller and fell in love. The couple was married in February 1886 and moved to West Orange, New Jersey where Edison had purchased an estate, Glenmont, for his bride. Thomas Edison lived here with Mina until his death. When Edison moved to West Orange, he was doing experimental work in makeshift facilities in his electric lamp factory in nearby Harrison, New Jersey. A few months after his marriage, however, Edison decided to build a new laboratory in West

Orange itself, less than a mile from his home. Edison possessed both the resources and experience by this time to build, "the best equipped and largest laboratory extant and the facilities superior to any other for rapid and cheap development of an invention ". The new laboratory complex consisting of five buildings opened in November. A three story main laboratory building contained a power plant, machine shops, stock rooms, experimental rooms and a large library. Four smaller one story buildings built perpendicular to the main building contained a physics lab, chemistry lab, metallurgy lab, pattern shop, and chemical storage. The large size of the laboratory not only allowed Edison to work on any sort of project, but also allowed him to work on as many as ten or twenty projects at once. Over the years, factories to manufacture Edison inventions were built around the laboratory. The entire laboratory and factory complex eventually covered more than twenty acres and employed 10, people at its peak during World War One. After opening the new laboratory, Edison began to work on the phonograph again, having set the project aside to develop the electric light in the late s. By the s, Edison began to manufacture phonographs for both home, and business use. Like the electric light, Edison developed everything needed to have a phonograph work, including records to play, equipment to record the records, and equipment to manufacture the records and the machines. In the process of making the phonograph practical, Edison created the recording industry. While working on the phonograph, Edison began working on a device that, "does for the eye what the phonograph does for the ear", this was to become motion pictures. Edison first demonstrated motion pictures in , and began commercial production of "movies" two years later in a peculiar looking structure, built on the laboratory grounds, known as the Black Maria. Like the electric light and phonograph before it, Edison developed a complete system, developing everything needed to both film and show motion pictures. There were therefore many contributors to the swift development of motion pictures beyond the early work of Edison. By the late s, a thriving new industry was firmly established, and by the industry had become so competitive that Edison got out of the movie business all together. Throughout the decade Edison worked in his laboratory and in the old iron mines of northwestern New Jersey to develop methods of mining iron ore to feed the insatiable demand of the Pennsylvania steel mills. To finance this work, Edison sold all his stock in General Electric. Despite ten years of work and millions of dollars spent on research and development, Edison was never able to make the process commercially practical, and lost all the money he had invested. This would have meant financial ruin had not Edison continued to develop the phonograph and motion pictures at the same time. As it was, Edison entered the new century still financially secure and ready to take on another challenge. Edison very much enjoyed automobiles and owned a number of different types during his life, powered by gasoline, electricity, and steam. Edison thought that electric propulsion was clearly the best method of powering cars, but realized that conventional lead-acid storage batteries were inadequate for the job. Edison began to develop an alkaline battery in . By the time Edison introduced his new alkaline battery, the gasoline powered car had so improved that electric vehicles were becoming increasingly less common, being used mainly as delivery vehicles in cities. However, the Edison alkaline battery proved useful for lighting railway cars and signals, maritime buoys, and miners lamps. By , Thomas Edison had built a vast industrial operation in West Orange. Numerous factories had been built through the years around the original laboratory, and the staff of the entire complex had grown into the thousands. To better manage operations, Edison brought all the companies he had started to make his inventions together into one corporation, Thomas A. Edison Incorporated, with Edison as president and chairman. Edison was sixty-four by this time and his role with his company and in life began to change. Edison left more of the daily operations of both the laboratory and the factories to others. The laboratory itself did less original experimental work and instead worked more on refining existing Edison products such as the phonograph. Although Edison continued to file for and receive patents for new inventions, the days of developing new products that changed lives and created industries were behind him. In the , Edison was asked to head the Naval Consulting Board. With the United States inching closer towards the involvement in World War One, the Naval Consulting Board was an attempt to organize the talents of the leading scientists and inventors in the United States for the benefit of the American armed forces. Edison favored preparedness, and accepted the appointment. The Board did not make a notable contribution to the final allied victory, but did serve as a precedent for future successful cooperation between scientists, inventors and the United States

military. During the war, at age seventy, Edison spent several months on Long Island Sound in a borrowed navy vessel experimenting on techniques for detecting submarines. In , in recognition of a lifetime of achievement, the United States Congress voted Edison a special Medal of Honor. In the nation celebrated the golden jubilee of the incandescent light. Attendees included President Herbert Hoover and many of the leading American scientists and inventors. They asked Edison to find an alternative source of rubber for use in automobile tires. The natural rubber used for tires up to that time came from the rubber tree, which does not grow in the United States. Crude rubber had to be imported and was becoming increasingly expensive. With his customary energy and thoroughness, Edison tested thousands of different plants to find a suitable substitute, eventually finding a type of Goldenrod weed that could produce enough rubber to be feasible. Edison was still working on this at the time of his death. During the last two years of his life Edison was in increasingly poor health. Edison spent more time away from the laboratory, working instead at Glenmont. Trips to the family vacation home in Fort Myers, Florida became longer. Edison was past eighty and suffering from a number of ailments. In August Edison collapsed at Glenmont. Essentially house bound from that point, Edison steadily declined until at 3:

Chapter 9 : Thomas Alva Edison was Mexican? | AncestryZacatecas Mexico

Thomas Edison's first great invention was the tin foil phonograph. While working to improve the efficiency of a telegraph transmitter, he noticed that the tape of the machine gave off a noise that resembled spoken words when played at a high speed.

Quotes[edit] Everything comes to him who hustles while he waits. What a source of power! Discontent is the first necessity of progress. Opportunity is missed by most people because it is dressed in overalls and looks like work. I find out what the world needs. Then, I go ahead and invent it. To Monsieur Eiffel the Engineer, the brave builder of so gigantic and original a specimen of modern Engineering from one who has the greatest respect and admiration for all Engineers including the Great Engineer the Bon Dieu. During all those years of experimentation and research, I never once made a discovery. All my work was deductive, and the results I achieved were those of invention, pure and simple. I would construct a theory and work on its lines until I found it was untenable. Then it would be discarded at once and another theory evolved. This was the only possible way for me to work out the problem. Yet only in two cases did my experiments prove the truth of my theory. My chief difficulty was in constructing the carbon filament. Every quarter of the globe was ransacked by my agents, and all sorts of the queerest materials used, until finally the shred of bamboo, now utilized by us, was settled upon. The doctor of the future will give no medicine, but will instruct his patient in the care of the human frame, in diet and in the cause and prevention of disease. This has been reprinted many times with slight variations on the wording; it is part of a much larger quote directly from Edison published in Nineteen hundred and three will bring great advances in surgery, in the study of bacteria, in the knowledge of the cause and prevention of disease. Medicine is played out. Every new discovery of bacteria shows us all the more convincingly that we have been wrong and that the million tons of stuff we have taken was all useless. They may even discover the germ of old age. Surgery, diet, antiseptics “ these three are the vital things of the future in preserving the health of humanity. I am afraid of them. I stopped experimenting with them two years ago, when I came near to losing my eyesight and Dally, my assistant practically lost the use of both of his arms. We do not know the gods of religions. And nature is not kind, or merciful, or loving. If God made me “ the fabled God of the three qualities of which I spoke: And where do His mercy, kindness, and love for that fish come in? October 2, Genius is one percent inspiration, ninety-nine percent perspiration. None of my inventions came by accident. I see a worthwhile need to be met and I make trial after trial until it comes. What it boils down to is one per cent inspiration and ninety-nine percent perspiration. Statement in a press conference , as quoted in Uncommon Friends: Variant forms without early citation: No, when I have, fully decided that a result is worth getting, I go about it, and make trial after trial, until it comes. Everything comes to him who hustles while he waits. As quoted in Thomas Alva Edison: If our nation can issue a dollar bond, it can issue a dollar bill. The element that makes the bond good, makes the bill good, also. Both are promises to pay, but one promise fattens the usurers and the other helps the people. My mind is incapable of conceiving such a thing as a soul. I may be in error, and man may have a soul; but I simply do not believe it. What a soul may be is beyond my understanding. I believe in the existence of a Supreme Intelligence pervading the Universe. As quoted in Thomas A. Edison, Benefactor of Mankind: All we have “ everything “ favors the idea of what religionists call the "Hereafter. It is very beautiful over there! These have sometimes been reported as his last words, but were actually spoken several days before his death, as he awoke from a nap, gazing upwards, as reported by his physician Dr. Howe, in Thomas A. There is a great directing head of people and things “ a Supreme Being who looks after the destinies of the world. I am convinced that the body is made up of entities that are intelligent and are directed by this Higher Power. When one cuts his finger, I believe it is the intelligence of these entities which heals the wound. When one is sick, it is the intelligence of these entities which brings convalescence. You know that there are living cells in the body so tiny that the microscope cannot find them at all. The entities that give life and soul to the human body are finer still and lie infinitely beyond the reach of our finest scientific instruments. When these entities leave the body, the body is like a ship without a rudder “ deserted, motionless and dead. As quoted in The Romance and

Drama of the Rubber Industry by Harvey Samuel Firestone Restlessness is discontent and discontent is the first necessity of progress. Show me a thoroughly satisfied man and I will show you a failure. Through all the years of experimenting and research, I never once made a discovery. I start where the last man left off. As quoted in Makers of the Modern World: So far as the religion of the day is concerned, it is a damned fake Religion is all bunk. As quoted in What on Earth is an Atheist! If we did all the things we are capable of doing, we would literally astound ourselves. As quoted in Motivating Humans: To invent, you need a good imagination and a pile of junk. Everyone steals in commerce and industry. But I know how to steal! As quoted in Tesla: I have stolen a lot myself. But at least I know how to steal. Wilson and Stanley Marcus, p. Response received after Edison spat on the floor and before he walked off when M. Rosanoff joined the West Orange, New Jersey team in and humbly asked: Edison, please tell me what laboratory rules you want me to observe. As quoted in Artifacts: Our greatest weakness lies in giving up. The most certain way to succeed is always to try just one more time. I have never seen the slightest scientific proof of the religious ideas of heaven and hell, of future life for individuals, or of a personal God. As quoted in Jesus: I owe my success to the fact that I never had a clock in my workroom. Seventy-five of us worked twenty hours every day and slept only four hours and thrived on it. Runes - Full essay online I consider Paine our greatest political thinker. As we have not advanced, and perhaps never shall advance, beyond the Declaration and Constitution, so Paine has had no successors who extended his principles. Tom Paine has almost no influence on present-day thinking in the United States because he is unknown to the average citizen. We never had a sounder intelligence in this Republic. He was the equal of Washington in making American liberty possible. Where Washington performed Paine devised and wrote. The deeds of one in the field were matched by the deeds of the other with his pen. In Common Sense Paine flared forth with a document so powerful that the Revolution became inevitable. Washington recognized the difference, and in his calm way said that matters never could be the same again. I consider Paine our greatest political thinker. I am certain of it. Truth is governed by natural laws and cannot be denied. Paine spoke truth with a peculiarly clear and forceful ring. Therefore time must balance the scales. Looking back to those times we cannot, without much reading, clearly gauge the sentiment of the Colonies. Perhaps the larger number of responsible men still hoped for peace with England.