

## Part Three

### Prague, Budapest, Paris, Strasbourg

#### Prague: January 1880 - January 1881

The September sunlight beat on the bright-coloured roofs and spires of Prague and, as the Czech Airlines plane circles above the city, I count 15 bridges on the Vltava, then, as the plane descended to the airport, saw seven more, and wondered what the word *praha* means in Czech. In Serbian, *prag* means threshold. And Prague would prove to be an important passage in the life of Nikola Tesla. Still smarting from failures in Graz and Gospic, for Tesla this was it: he had to make good this time, to himself, to his family, and even to some relations and neighbours who had begun to regard him as being passing strange.

The 23 year-old Tesla arrived in Prague about the 10th of January, 1880.

He was late to enroll for the Spring term in the Karl-Ferdinand University; but had he arrived even earlier, he would not have been able to do so, for he had never taken Greek, and did not speak and write Czech. Nominally, this latter, should not have been a factor, as the University was a German-language institution, but the Czechs had begun to pursue their dream of nationhood and language rights and, under the slogan of "Czech schools for Czech children," would force, two years later, division of the University into separate German and Czech-language Branches.

Tesla would have to learn anyhow what he could, and remake himself in this baroque, cosmopolitan city, where street signs and signs on public buildings were sometimes written in German, Czech, Hebrew, Hungarian, even Russian; and were there churches here: St. Nicholas, St. Peter and Paul, and St. Vitus Cathedral....; he had never seen so many pubs, wineries, bakeries, restaurants and keys – the street door key, the flat key, the room key, the bathroom key.

A brown line, a meter high, ran down the buildings of some streets, indicating where the flood waters had crested two months

earlier, when the swollen Vltava burst out of its channels and embankments, and flooded the streets of the city. The subway tunnels smelled of mud and rusting metal. Water, like men's fortune and misfortune, was everywhere. Why hadn't Czechs in a thousand years built proper dykes and aqueducts to accommodate this slow-flowing current?

In the Czech National Technical Museum, a relatively modern building, they had only "secondary" documentation about Tesla, and I am handed a plethora of cardboard boxes tied with ribbons, and piles of fading brown envelopes, containing yellowing articles in several languages, often in several copies. Under the heading "Celebrations of a Stranger," there is information on a series of celebratory activities across Europe in 1936 and '37, in observance of Tesla's 80th birthday: in Brno, on May 23; Sofia, June 28; Prague, October 28, with a copy of the program, and the speech by the Dean of the Technical School; Vienna; Poitiers; Graz; Paris...., and Tesla's telegram to Prague University, in response to being awarded an Honorary Doctorate. It is dated December 5, 1936, and reads:

*Please convey to the community of Praha my sincere thanks for its kind and appreciative message. I still have dear memories of your beautiful city and the inspiration received there is even now helpful in my work. The great honors bestowed upon me by his Excellency the President and your university are very highly valued and I hope to prove myself more worthy of them. My admiration for the splendid people of Czechoslovak torch bearers of civilization cannot be expressed in words and I have the warmest wishes for their success. Nikola Tesla.*

In 1937, Tesla was also awarded the Czechoslovak Order of the White Lion First Class: an 8-pointed star medallion, with two words in its centre: *Pravda Vitezi* ("Truth Will Prevail"). There are articles extolling Tesla's contributions to the world of science: he is a Slav electro-technical genius; he is a Serb; a Yugoslav; a son of a Prince of the Orthodox church.

By noon, I have read through all the documents. Then the

Director assigned me an intern for the afternoon, to help me find certain Tesla-related places in the city.

We first went to Smeckach Street, where Tesla lived during his 12-month stay in Prague. The houses on both sides of the narrow, hilly street were of about the same size, age, and façade of gray stone, and would not have changed much since 1880, except for the modern amenities, of course. I stood looking at House Number 13. A woman with a dumpling-like face opened a window on one of the higher stories, and leaning on her window sill, wanted to know what was afoot.



Smeckach  
Street, #13

The intern explained that the *Pan* – me – was writing a book about Tesla, who had once lived in this building.

“But I have lived in this house for fifty years, and never knew that Nikola Tesla lived here,” she responded in her *mitteleuropa* authoritative voice.

Tesla might have roomed in a flat with just such a woman, who had a spare, unheated, sparsely-furnished room to let, and would probably have stayed out of it as much as he could.

The concierge unlocked the two-wing entrance door that could once admit a closed landau, and when we explained that I proposed to install a plaque on the building, attesting that Tesla had resided here.

She responded, “But, sir, only the owner of the building can decide on that.”

“Where can I contact him?”

“The owner is a woman. And she lives in Germany, I think.”

The concierge promised to contact the owner on my behalf, but her demeanour and gestures of incomprehension made me doubtful that she would do it without much further prompting.

Prague is a city of almost constant noise: noises rise from side streets, from old courtyards, from holes in the ground, shovels grating against the pavement, almost constant striking of clocks, and shouting. On Venceslas Square, a group of men, some wearing Union Jack T-shirts and hats, spilled out from a pub onto a sidewalk and, full of Czech beer, broke into a British soccer song.

A few doors away, inside a blank arcade, I saw posters about Krajina - a pocket of Czech settlers, living in the former Serb Krajina. Someone was promoting the month of September as “Krajina Days” for those Czechs.

There is a palpable disconnect between the old city of Prague, with its stately buildings, black-faced clocks and innumerable sundials, and the Czechs who walk in the maze of its shadows.

I next visit the Clementinum Library, a complex of well-preserved scholastic buildings, which owed its name, at least in part, to the Slavonic teachers St. Cyril, St. Methodius and St. Klement, who came to Moravia from Macedonia more than a thousand

years ago. The Library had opened to Tesla a world of rows of books, the like of which he had not even thought of before. He read indiscriminately, in a multitude of languages, sitting for hours bent over books and papers. The *best thing* he could have done in Prague, he wrote later.

He was drawn to Kepler, a thin-limbed hypochondriac, also destined for priesthood, but who loved mathematics, shared freely his knowledge, and lived to see the day of recognition of his discoveries of the planetary laws and elliptical orbits. Kepler had arrived in Prague in the middle of January, 1600, after fleeing religious expulsions in Graz, and stayed here for twelve years. Tesla read Kepler's *Laws of Nature*, looked at his telescope and iron-brass sextant, and every day walked by the house where he had once lodged with his wife and many children.

Turning away from the monument to Jan Hus, I passed a newly-installed marker, which stated: "A memorial plaque erected in 1995, in observance of the 50th year of liberation of the city from the German misrule." Delicately said. I think of Kafka and Hasek, and Capek, but especially Kafka, born the year Tesla was in Prague.

In 1880, the main streets of Prague were lit by gaslight, although the first electric lights, some called "Russian," were being installed. Nevertheless, the streets were dark save for the gleaming of the black granite cobblestones against the snow banks and the night sky. Tesla was a good walker and more often than not, returning from the Klementinum, instead of going to his lodging, stopped in the warm *Kavarna* (café) on Vodickova Street, where ... *artists were plentiful and.... intelligent company could be found...* Students, patriots, exiles, anarchists, Russian revolutionaries, even established composers, like Dvorak (1841-1904), whom he would meet socially in New York, ten years later, came to the *Kavarna*. Here, Tesla would loosen his necktie, smoke, drink coffee, and play chess or billiards, free to be with others when he didn't want to be alone, and free to leave when he did not want to be with them.

In the Prague daily *Narodna Politika* for January 1, 1927,

Frantisek Zurek, who knew Tesla both as a *Kavarna* habitue, and a reader in the Klementinum, remembered him as "unbeatable" in billiards. Tesla, standing beside the same green pool table, "non-challant" and emitting a "short sarcastic laugh," would play no one on the level. He spotted any man 48 points in a game up to a "century", or even 50 and, provided he shot first, routinely win. He played a precise game of billiards, as if he were drawing lines on paper, instead of using a wooden cue and balls of compressed paper and resin. Students were deeply impressed by Tesla's understanding of mathematics. To Zurek, he was "terribly smart."

During that year, Zurek writes, Lord Byron was all a rage in Prague. He was read for his poetry, fearless temper, critical notions and vanity. Prague was full of Byronic men, sprung from Faust and Helen. According to Zurek, Tesla could recite whole sections of Byron's poetry in the original English, and freely submitted himself to the test; he boasted that he knew by heart the chief works of Goethe and Schiller in German, and claimed that he had inherited his faculties from his father, who could recite entire books of the Bible from memory. Zurek notes that Tesla was wont to say that there was little room for him in Europe, and that he would have to go, first to Paris, then to America.

On Vodicka Street, we couldn't find the old *Kavarna*. The best explanation the intern could obtain was that, back in the 1920s, the building was either demolished, or completely rebuilt.

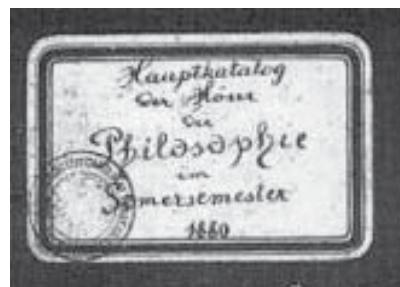
The girl was getting bored with Tesla. "He may be big in your country, but he is not important here," she said, looking down at her new square-toed black shoes.

I am not sure which country she assigns to me, because, like Tesla, I have no country. But I say nothing.

In Spring, when the windows of *Kavarna*, and restaurants and hotels were thrown open, in the night he heard dance music, and saw men and women pressing against each other, glowing with their charged emotions. But he would shut down *that* side of life, and live within himself, in the throes of a desperate search.

*At right, detail from cover of University registry; below and facing, entries for Tesla in that book.*

In the *Katalogue der*



<u>11</u>			
<u>Silber Fisch</u>			
<u>Trotte</u>	<u>schwungvoll</u>		
<u>schlicht</u>	<u>schön</u>		
<u>35 J. jense.</u>	<u>schafft</u>		

*Studierendum*, for the summer semester 1880, Tesla is listed as an “external” student, auditing lectures in Analytical Geometry and Experimental Physics. Electrotechnical studies were more an experiment than a serious subject. Tesla absorbed the theories of Hume and Descartes. Descartes was in Prague as a 24-year old soldier in the 30-year War, and even he, Descartes, who would de-sacralize man and nature, wielded in his hand a bloodied sword of religious and ethnic cleansing. Tesla followed the writings of the current Rector, Ernst Mach (1838-1916), who had been a Professor of Physics and Mathematics in Graz in the 1860s. Mach questioned Newton’s concepts of space and time, thought that knowledge was, principally, a matter of external sensations, and that mass is conditioned by the surrounding environment. His ideas in aerodynamics were profoundly new. But was man a machine, like any other, no more than the sum of its functioning parts, even replaceable parts? Although Tesla would express (subscribe to) that view at times, he would also write of the human body .... *as a priceless gift... a marvelous work of art... and mastery beyond human conception, and so delicate that a word, a breath, a look, nay, a thought may injure it.*

Tesla did not obtain any marks in his courses.

In the evening, I had dinner with a man from Czech Television, who was preparing a documentary about Tesla, and had interviewed me, some months earlier, in Niagara Falls. He brought to my attention the Prague Telephone Directory, which listed upward of 20 companies bearing the name Tesla – in computers, Telecommunications and Television, but hastened to add that none

was willing to contribute to the making of the film and, in fact, asserted that their name stood for *TEchnika SLAbproudá* (low voltage technology), and not for Nikola Tesla. In Prague, Tesla is a brand name that stands for reliability and high quality performance. There are some who even think that Tesla was Czech.

Little is known of what Tesla did in the later part of 1880. There is little evidence of wider contacts, or short excursions. He was absorbed in his *idée fixe*: *Could not a motor be operated without commutators?* continued to study languages, including Russian, and write poetry, putting into words things for which there was no more place in his heart. Science and poetry summarized the man's consciousness of the world; he compared structures, cadences and interplay between the two; and went over the question, day after day, assembling and reassembling various apparata, ordering his thoughts, continually putting little pieces together, in order to complete the picture in his mind.

At the end of the year, 1880, Tesla's sojourn in Prague came to an end. His wallet was light, his money had dwindled, his days of schooling were over. And outside the Carlovian setting of learning, there were the streets of poverty, overcrowding, nationalistic rivalries, uncertain political loyalties, wars of words and

sometimes fists, prostitution, immigration. It was time to return the keys, and move on.

He read in the Prague press that in Budapest, one Ferenc Puskas, an ex-Lieutenant in the Hussars, had received a commission from his brother Tivadar, an Edison man in Paris, to construct an American Telephone Exchange. Tesla's uncle, Pavle, a Colonel in the Hussars, and now stationed in Budapest, would, no doubt, know Ferenc. Maybe he could help him get a job. He wrote to Pavle, and Pavle promptly contacted his fellow former officer, and informed Nikola that a job was his.

Tesla knew no Hungarian, but everyone spoke German.

After New year's, Tesla left Prague by train to Budapest.

"The Germans are coming back," the Desk clerk tells me, as I am checking out of the Hotel, tells me indifferently, but tells me anyway. He did not know how many Germans had been ethnically cleansed from Czechoslovakia in the post WWII years, but knew that they were now coming back. "There are also thousands of Slovaks in Prague, studying, working, speaking Slovak more freely than they spoke it before."

Did he have any views on Czech accession to the European institutions?

No. It was all a matter of big powers. The Czechs were too small to determine their own destiny.

It was in Prague that Kepler coined the term "satellite."

The taxi driver thinks that I am German, and swindles me rapaciously, but when I tell him that I am American, he gives me back 100 Crowns.

I was alone in a first-class compartment of the overnight train from Prague to Budapest. For a while, uniformed Czechs patrolled the train, but by the time we entered Slovakia, the passengers were left to themselves. Little stations came out of the dark, dimly lit, and disappeared. I thought how awful it would be to wait in one of these sordid stations, in a night such as this, for a special train to take you to a place of execution. And for hundreds of thousands, these desolate relics of a by-gone era were the last moments of life, only two generations ago.

Around five in the morning, I fell asleep, only to rouse myself

to catch a thief taking one of my pieces of luggage. I sat up, and he dropped the bag and froze in the doorway: a short-haired thug, in a short-sleeved black T-shirt and tight, beltless pants. He looked at my reflection in the corridor window, to see what I was going to do. I put my bag back on the luggage rack, and slammed the door shut. He went away, crestfallen. In that piece of luggage were my photographs from Prague, and my return airticket.

I did not go back to sleep and, in a short while, we were in Hungary. The sun rose through the thinning morning mist and the dew-laden foliage on the banks of the Danube, and burst suddenly and blindingly bright, into the staleness of the train compartment.

## Budapest

### January 1881 – April 1882

In the 1880s, Budapest, the recently merged Pest and Buda, was a prosperous city, with many fine buildings and villas, elegant lamp posts, the first electric lights leading to the Abraham Ganz factory, horse-drawn tramways, rich cuisine and was glowing with pride, following the recent political achievements at the expense of Vienna. But when Tesla went to see Ferenc Puskas, looking for the promised job in the Telephone Exchange, the enterprise was not anywhere near operational.

Puskas (1848 – '84) was a cultured, conventionally handsome and formal man, who had, with his brother Tivadar, attended the University of Vienna - studying engineering, without graduating – and ambitious for his family and his country. He carried a gold whistle around his neck, a gift from Tivadar, who had fashioned it from the gold he found during his prospecting days in America.

Meanwhile, Tesla had to look for another employment and, .... as irony of fate willed it,... found it as a *draftsman* in the Central Telegraph Office of the Hungarian Government. His duties soon expanded, to include *calculations, designs and esti-*

*mates. But he was beset by his need to detach .... the commutator from the machine... He had made a ...decided advance... in Prague, but knew he had to reach higher, break new ground, think of the infinite. Giving up was not an option. He would write,*

*I started by first picturing in my mind a direct current machine, running it and following the changing flow...Next I would visualize systems comprised of motors and generators and operate them in various ways. The images I saw were perfectly real and tangible.*

His entire life force, all impulses and urges, were directed toward the solution and ...*called for a vigorous mental effort....He dreamed of achievements and glory, had no patience, and within weeks of starting his employment, succumbed to his .... incessant thinking... and had a complete nervous breakdown...* His physical state had deteriorated. The breakdown quickened and sharpened his perspective a hundredfold, so that he ... *could hear the ticking of a watch with three rooms between me and the time-piece. A fly alighting on a table in the room would cause a dull thud in my ear. The whistle of a locomotive... made the chair on which I sat vibrate... in the dark I... could detect the presence of an object set a distance of twelve feet by a peculiar sensation on the forehead. .... In some instances, I have seen all the air around me filled with tongues of living flame.*

He stayed indoors, sunk in his night shirt and beddings, shivering continually under the thunder of cart wheels and horses, organ grinders, bells, and the sound of voices, incomprehensible and foreign. The air itself hurt. He had issued from a *line of a wiry and long-lived stock*. In the generations behind him, one man had lived to be 129. Mathematicians and scientists of the past were men of great physical stamina. But his bed had to be placed on rubber cushions. His pulse fluctuated from very low to 260 beats per minute. Relatives and co-workers brought food and flowers, and expressed sympathy. A renown physician, curious about Nikola's illness, came to see him, pronounced his malady incurable, and gave him daily sedations of Calcium Bromide to

help reduce nervous stress. To date, no one has adequately explained what Tesla's affliction might have been - only that it was attributable to the disorder and imbalance of his particularly large pituitary gland.

One day, a co-worker, Antal Szigety, came to his lodging, and said that, while he had no clue as to what was ailing him, knew that a walk in the fresh air and light never harmed anyone, and pointed toward the City park, *Varosliget*, and invited him to come for a walk. Szigety was a robust man, *Apollo-like from neck down..., Tesla would write later, ... but had a big head with an awful lump on one side and a sallow complexion....*

Tesla responded, and before long, felt less emotionally shattered. ... *We exercised every day and I gained rapidly in strength. My mind also seemed to grow more vigorous and as my thoughts turned to the subject that absorbed me I was surprised at my confidence of success. On one occasion, ever present in my recollection....*

During a walk in the park, toward the end of February, Tesla looked at the setting sun, and began to recite, *the glorious passage* from Goethe's *Faust*:

*The sunglow retreats, the day is outlived,  
It hurries off, new life to waken elsewhere,  
Oh, for light wings to lift me from the earth,  
That I may strive on, follow it forever!  
A glorious dream, while the glories fade,  
For I have no wings to raise me into the air,  
No wing to lift the body...*

Tesla stopped, speechless and transfixed, for he saw with the eyes of the Prophet Isaiah, what he had been seeking so long.... *As I uttered these words, the idea came like a flash of lightning .... and in an instant the truth was revealed. I drew with a stick on the sand the diagram of my motor... secrets of nature which... I had wrested from her against all odds and at the peril of my existence...*

He drew a diagram of two pistons, alternating, and perma-

nently one at the top and one at the bottom of the stroke, each turning the engine: two currents, out of step with each other, at high speed, creating a magnetic field. Just like the sun - setting here, but rising elsewhere.

He tried to explain, "Watch me! Watch me reverse it! See my AC motor here - a mathematical deduction. There is no truth which cannot be expressed simply."

Szigety stood dumbfounded, a silent onlooker to the miracle of discovery.

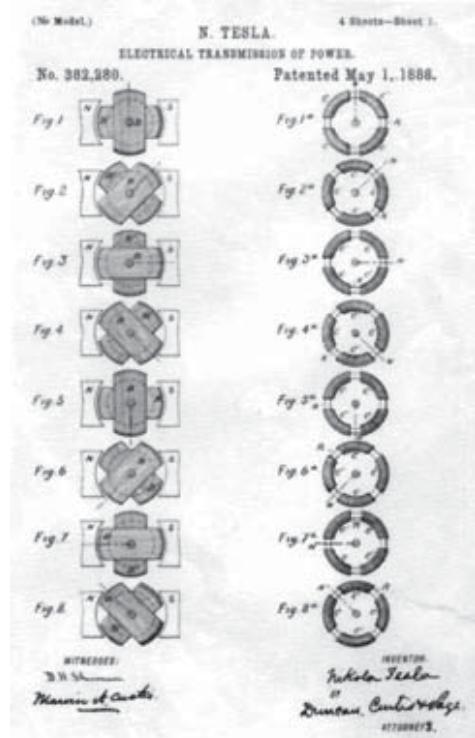
"See, how smoothly it runs. No commutator, no brushes, no sparking. As the current in one coil decays, in the adjacent coil it increases, coil after coil, creating new magnetic rotating fields and pushing the shaft continually."

He had been right in Graz, after all. The fire, the wheel, and now the electro-magnetic field. His arrow had hit the target. Perhaps the disarrangement of his senses had been necessary. He

had joined the community of the giants of science. His life had been preserved for a purpose.

*Tesla's concept of alternating current and magnetic field rotation.*

His ordeal was over, but the quest was, perhaps, only beginning, for that spring and summer, he was in the throes of discoveries. He had entered a treasure house of electricity, and as a window upon window,



opened before him; each window, and each discovery, contained in itself something of the entire flowing world of electricity. It was all new, and yet, he felt as if he had always known it... *electrical power was present everywhere in unlimited quantities*. He was like a kid spinning on his heel in the rain-softened earth, and spreading his arms, to see the span of his reach. How could alternating current be made to work in one direction? Could there be three currents? How far could AC be transmitted? What machinery should be designed to go with this force? For the right-handed and the left-handed men equally.

*In less than two months, Tesla wrote, I evolved virtually all the types of motors and modifications of the system now identified with my name... it was a mental state of happiness as complete as I have ever known in life. Ideas came in an uninterrupted stream and the only difficulty I had was to hold them fast.*

All knowledge was shareable, and his discussed his discoveries with whomever wanted to listen. Of all the languages he spoke, the language of scientific discovery was the most true, the most eloquent, the freest of biased minds. But Budapest society was an old one, where new thoughts did not sprout easily, where even Edison's DC, which went in one direction, and died out a kilometre away from the source, was news enough.

*The City Park, Budapest*



I visit *Varosliget* where, in one glorious moment, phenomena of nature, poetry and man's desire to know came together. But there is no sun on this day, and roads and pathways through the park were paved, and a man could no longer take a dry twig and draw his thoughts in the sand.

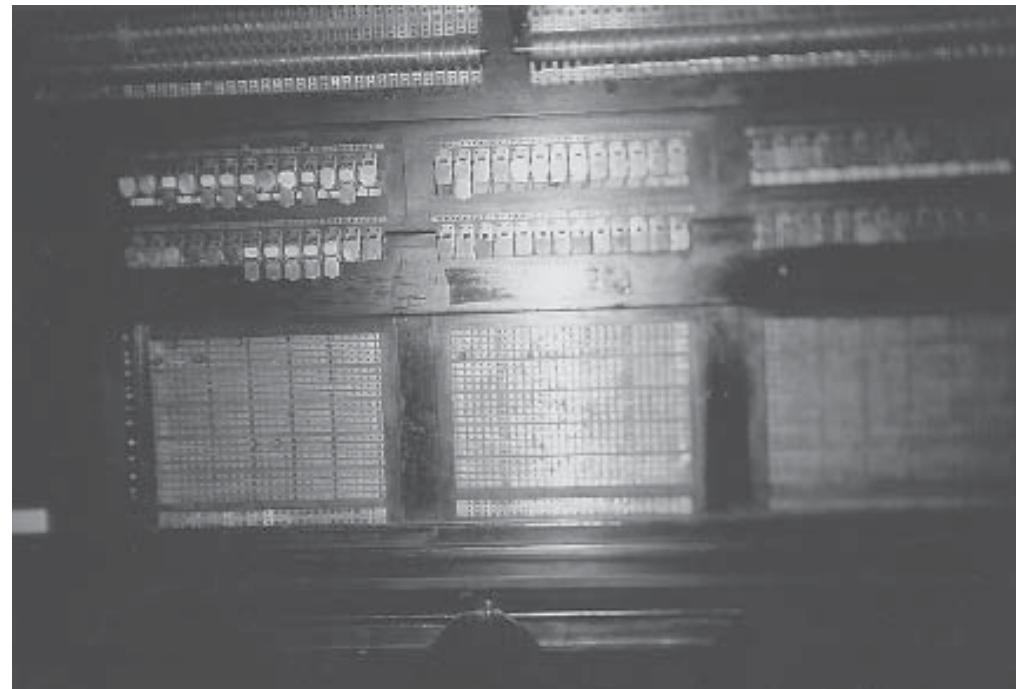
On May 1, 1881, the Budapest Telephone Exchange became operational. It had twenty-five subscribers, and twenty-five employees, most of them uniformed men, pulling and reinserting the connecting wires of the switchboard. Tesla was *the chief electrician*. When customers complained that there was a ghostly hum and crackling on the lines, he made improvements to the equipment, by adding sound adjusters to amplify the telephone signal, and constructing the amplifier, a precursor of the loudspeaker. He did not patent the amplifier; there were no patent laws in place in Austria-Hungary yet. In December of that year, an opera, *Janos Hunyadi*, was transmitted from the Vigado Opera House to twelve listeners at a time, by a telephone devise called theatophone.

The Director of the Electro-Technical Museum points out a vacant lot, and tells me that that's where the old Telephone Exchange was, then drives me to the Museum of Telephony, where I see the original switchboard, expanded eventually to 3000 lines, and serving, with various additions until the 1960s. I also see Tesla's amplifier.

But no one can tell me where Tesla resided, except that it was somewhere in Pest. And nobody knew anything about Szigety.

In downtown Budapest, there is a proliferation of statues, memorials, plaques and friezes, celebrating various national and nationalistic heroes, but also an abundance of Sphinx-like buildings with crumbling facades.

We visit a place called Pomaz, some kilometres outside the city, where Tesla's uncle Pavle once lived, and where Nikola was a frequent visitor on Sundays and holidays, coming out here for home cooked meals and walks in the country. Colonel Pavle, a man from Lika, had married a daughter of a rich Serb landowner, Petar Lupa, and lived on an immense estate, in a one-level house nearly a city block long, on the road that to this day bears the



*Telephone switchboard, used in Budapest 1881 to 1960s*

name of Serb Street. Pomaz is a fine and temperate place, and even now, 120 years later, one easily imagines herds of horses in the hillsides, and loads of grain being driven to the water mills on the Danube. At the time, there was a vibrant Serbian community hereabouts, descendants of the great migration of 1690, when the Kosovo Serbs – some 200,000 souls – fleeing before the Turks, came up as far north as Szentendre and Pomaz. The Patriarch, it is said to this day, knew where to stop. Forty-two Serbian Orthodox churches still remain in Hungary, down from over 70, but many of them are closed, because there aren't enough Serbs to maintain them. A full Serbian-language High school operates in Budapest.

One of Pavle Mandic's descendants still lives in Pomaz.

In the 1880s, the telephone was a great novelty, but the Hungarian banks, the government, and commercial community did not support the venture through investments and business concessions, and after the Exchange had reached 200 subscribers, it

ground to a halt. Tesla walked about in clothes worn shapeless and hardly wearable.

His predicament was solved when, in Spring 1882, Ferenc Puskas suggested that they both go to Paris to work for Tivadar, now the manager of Edison's patents in the *Compagnie Continentale Edison*, established in February. Tesla did not hesitate. Further stay in Budapest served no purpose, and his discoveries had to be transformed into inventions. He needed recognition. At *L'Exposition internationale d'electricite*, the previous year, the Edison incandescent lamp was shown for the first time in Europe, and there were constant demands for additional electrical facilities and lighting fixtures. There were Americans in Paris, with their new ways of doing things. They called it business, and doing business.

And so, after fifteen months in Budapest, in April of 1882, Nikola Tesla travelled to Paris. It is quite probable that he had no passport, but travelled on a gentleman's word.

It was Saturday, and the Budapest Wallenburg Museum was closed, as was the Synagogue beside it. I stood in front of the padlocked gate, looking at the stainless steel "Tree of Life," a sickly pigeon roosting in the dust, and further away, a mangy cat gnawing at a mouse. The quarter was deserted. Four hundred thousand people had been dragged through these streets in 1944, on their way to Auschwitz.

I returned to my hotel. The room I had looked down on a stucco-peeling and lath-bare house behind the hotel, and now, as I sat beside an open window, reading a Hungarian book about telephony, the sound of a violin came from another open window on that little house, came audibly, persistently, continuously. I imagined the player to be a child. A woman appeared at a landing on the top floor of the house, a cigarette in her mouth, and looked straight at me. She was just beginning to be hard of face and heavy of body. Our eyes met, for a fleeting moment of interest and search, and then she disappeared, retreating into her Magyar life. There was no mention of Tesla in the book I read. The child played variation after variation of Liszt, I think, for an hour, with-

out a break, and was still playing at 12:30, when I checked out of the hotel.

There are plenty of taxi cabs in Budapest, but the drivers are mostly hoodlums, who use would-be meters like guns, so I carried my luggage to the train station.

The express train from the Balkans to Vienna was half-an-hour late, and arrived, packed. I had paid for a reserved seat, but there was nowhere to sit down. There were policemen about, on the alert for aliens, and sure enough, a mid-eastern Moslem materialized, and lay promptly on the bench, as if on his death bed; within minutes, a few more of his co-travelers gathered about. A Red Cross ambulance made a passage through the crowd, and took the old man away, and more police arrived. And when the train moved out of the old station, I was glad, for the umpteenth time, to leave eastern Europe behind.

## Paris – Strasbourg – Paris

### April 1882 – May 1884

I observe the Vienna-Paris train ticket and read the names of places: the train is on time to the minute, arriving and leaving, station after station, country after country, alternating between darkness and big, well-lighted cities. The passengers are mostly young, mostly Austrians and Germans at first, then mostly French – prosperous, the new Europeans. At ten in the morning, we arrived at the Gare de L'Est in Paris.

Nikola Tesla arrived at the same station sometime in April 1882.

Paris burst upon his senses with all its vitality, lights, arts, elegant clothes, and thousands of factories and workshops. Avenues and buildings seemed to have materialized from the notebooks of Leonardo da Vinci. Years later, Tesla would write,

*I can never forget the deep impression that magic city produced on my mind. For several days after my arrival I*

*roamed through the streets in utter bewilderment of the new spectacle. The attractions were many and irresistible....*

He went to call on Tivadar Puskas (1844-'93). Puskas had worked in London, then gone to America in 1874-'75, to prospect for gold, only to lose his money and claims in the mountains of Colorado; but in New York he met Thomas Edison, and returned to Europe as his business representative in Paris. Tesla now learned that on February 2, not one but three new Edison companies were formed in Paris, all charged with different aspects of the same mandate: to promote, build or license Edison's system of electric lighting throughout Europe. Additional companies were quickly being set up in Britain, Germany, Switzerland and Italy. From Tivadar, Tesla went to see Charles Batchelor, the General Manager of *La Compagnie de la lumière Edison*, a lamp factory and machine shop at Ivry-sur-Seine. Batchelor (1845-1910) was Edison's associate, and an expert on light bulb filaments, which were made of carbonized sewing thread, cotton or bamboo. The Ivry plant manufactured nearly all the components necessary for the contents of the lighting system. Batchelor's

job was to hire the best engineers and technicians possible and, being a number cruncher, pay the minimum wage acceptable, and retain only the best. He hired Tesla on the spot.

Tesla found lodgings on Boulevard Saint Marcel, in one or another of the stately, five-or-six-story apartment buildings.

*boulevard Saint-Marcel*



And this is where I too find a room, in the Grand Hotel Jeanne d'Arc, located at the corner of the same Boulevard and Avenue Jeanne d'Arc. I had a corner room on the top floor. From the balcony, I could see over the tree tops, down the Boulevard, toward Pont d'Austerlitz and the Seine; and directly below, at the crossroads, there was a statue to the Maid of Orleans: a hefty peasant girl, bareheaded, clothed in a heavy rust-less tunic and light medieval shoes, her sword sheathed, her shield at her side, and in her right hand a raised banner with a white dove holding a scroll in its beak. In the morning, the sunshine streamed down the avenue at the statue of the Deliverer of her nation, at a time of domestic degeneration and foreign domination.

Tesla tried to interest Batchelor in his alternate current, telling him that it was an advancement on direct current - a wasteful method of lightning where ninety percent of energy went out as heat - but the very talk of AC was frowned upon. Edison's plants ran on DC. Rich men had invested heavily in it.

I take the Metro to Ivry, to look for the remains of the old factory, once located in a *parc ancien*, but in Ivry-sur-Seine and Ivry Maire, I am sent from street to street, and place to place, come across an old church dedicated to St. Peter and Paul, a closed cemetery, and a modest street bearing Edison's name - but no more. Later, not even Edison's museums in the United States could find a photograph of the plant.

In the summer of 1882, Tesla rose every morning at five, left his lodging, and walked to the Seine for a 30-minute swim in an outdoor swimming area, then took an omnibus to Ivry, where he had breakfast, and began to work at 8:30. The hours of work were long, and most men did not stay long. Late in the evening, Tesla dined in expensive restaurants. Those who dined with him, dined usually at his account. He bought expensive clothes, the very latest fashion, and liked to walk up and down the broad avenues, as he had walked in so many other European cities over the years, seeking he knew not what. He could scarcely recognize himself, the transformation was so complete.

## Tesla in Paris, 1883

*When Mr. Puskas asked me how I was getting along in the new sphere, I described the situation accurately in the statement that the last twenty-nine days of the month are the toughest!* Tesla wrote. He was constantly out on the town. But there is never a hint of any lechery or romantic attachment and relation.

*He met a number of Americans, and one, D. Cunningham, suggested that they ... form a stock company..., but Tesla had no idea what it was, and only laughed in incomprehension.*

Antal Szigety also

arrived. He and Tesla were to work together for most of the remainder of Antal's life – seven years. Szigety was a competent assistant, an honest man, satisfied to live in the shadow of a greater man, until the very end, in 1889, when the bond between the two cooled, and Szigety left New York, to strike out on his own, somewhere in the American West, only to die shortly thereafter, probably of brain inflammation. Several of his signatures attest to Tesla's patents.



February 7, 1883.  
Antal Szigety

That summer Tesla also worked on upgrading the electrical lighting of the Paris Opera House. On the day I visit the gold-laced building, a medley of pigeons cooed, strutted and fluttered about on its smooth steps. Tesla must have seen these pigeons' progenitors, and wondered at their innocence, procreation, and peace-bearing aura.

The plant at Ivry is said to have operated more efficiently than Edison's plants in America, but even so, there were mistakes – none bigger than the fiasco at the Railroad station in Strasbourg, when, during the opening ceremonies of the new lighting plant, a short circuit *blew out a large part of a wall*, endangering the life of Kaiser Wilhelm I, who was in attendance. So large a disaster, after the recent Franco-German war, in which Germany had taken Alsace and Lorraine, seemed even an act of sabotage. The German Government refused to accept the plant, and the Edison company stood to lose a large investment, as well as its reputation.

In February 1883, Batchelor dispatched Tesla to Strasbourg, to salvage the project, mollify the Germans, and get paid for the work.

I take a train from Paris to Strasbourg, through the rich and pleasant former *Reichsland*, through the kilometers and kilometers of vineyards straight as sections of corn, chalets and chateaux on the hilltops, herds of cows in the plains beside the streams, and homes along the roads. I had not expected the country to be so fine looking; it's no wonder that Germany and France fought so many wars over it. Suddenly, a light sheet of rain came through the sunshine.

*... there was a lightning flash, and immediately after the lightning flash, a torrent of rain came.... I realized that the sun was lifting the water and vapour, and the wind swept it over the region, where it accumulated and reached the condition where at a certain point, it was condensed and fell to earth again....* Tesla would say at a formal gathering, years later. Could man control the weather, and draw rain water from the ocean?

It was raining hard when we arrived in Strasbourg, the rain

beating against the cobbled square in front of the Railway station.



*Strasbourg railway station today*

Strasbourg is something of a border city - Franco-German *krajina*. The entire city is a UNESCO-designated heritage site, and the permanent seat of the European Parliament. The Parliament building is built in the shape of Kepler's ellipse.

And as Tesla might have done, after leaving the station, I went down the quay, beside the river Ill, past the half-timbered houses, to Place Gutenberg, in front of the 800-year old Strasbourg Cathedral. Gutenberg invented here the principle of the printing press. Erasmus' *The Praise of Folly* was first published here; the student Goethe liked to climb to the high platform, toward the top of the Cathedral's delicate steeple, to watch the sunrise; Tesla might have done likewise; Napoleon made here his headquarters, and wrote passionate letters to Josephine; in November 1918, a soviet of soldiers and workers had the control of the city; in 70 AD, Caesar Augustus arrived ....

*There were bacteria of greatness in that old town, Tesla would observe later.*

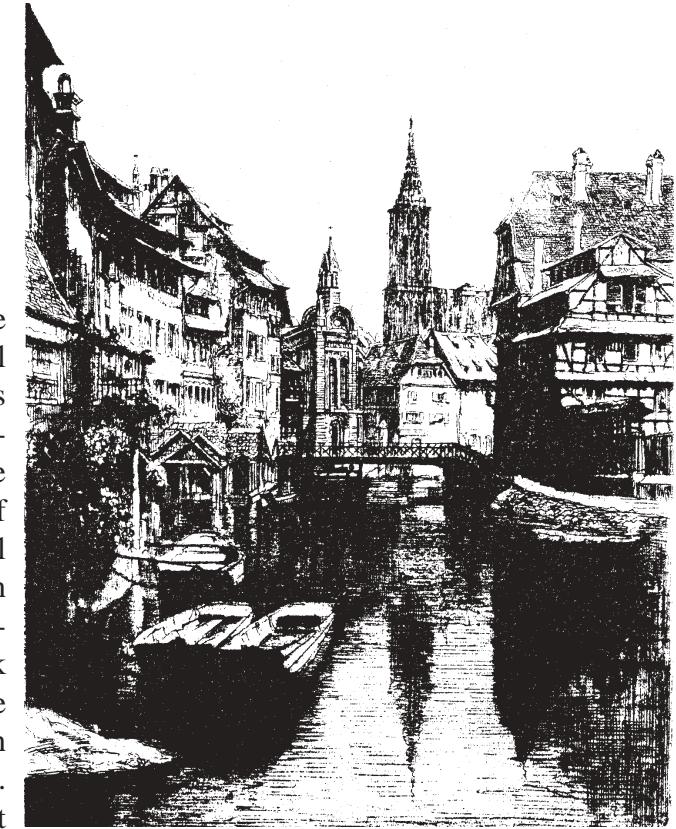
No one cared that Tesla had lived and worked in Strasbourg from February 1883 until February of the following year, and no one knew where he had lodged, although at one point, he re-

quested that a certain material be sent to him to the then Weissturmmring 8.

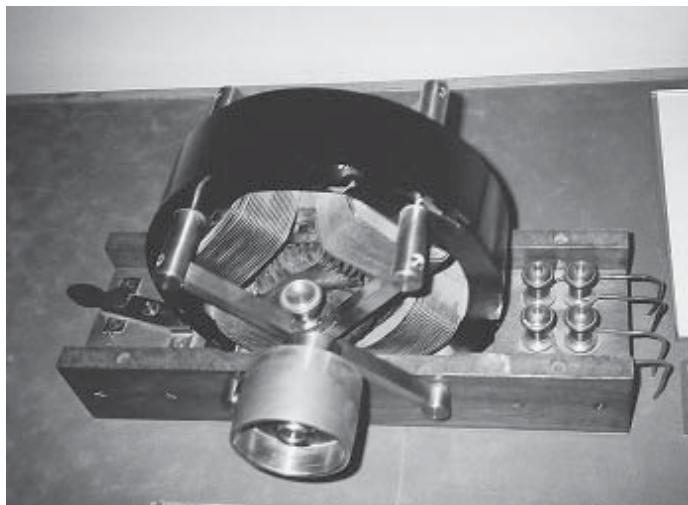
*Strasbourg  
Quay in the  
1880s, from a  
lithograph  
found in  
Tesla's papers*

Throughout the summer and fall of 1883, Tesla's principal occupation was the restructuring of the electrical power plant in the Railway station. The work was slow, and he wanted to do an *exemplary* job. He spent the first two months overseeing the repairs to the building itself. The German bureaucrats were suspicious of the French, and every piece of work had to be officially approved in writing ahead of time. Tesla also traveled to other German cities, as far as Munich and Berlin, to repair other plants, for early power plants were plagued with fires and black-outs, and no two were constructed the same way. It was all new, and knowledgeable men in the electrical field were in short supply.

Delays in obtaining approvals and material, and the hire of skilful men, left Tesla plenty of time to devote to his own thinking. When he realized that his stay in Strasbourg would be much longer than anticipated, he rented *a mechanical shop close to the rail-*



*road station... to confirm his theories through experiments...* and set out to build a motor which would operate on alternating current. He forged in the smithy whatever he needed, and in July 1883 built his first induction motor. He had been building it in his head for a year or longer, had judged the dimensions to a hundredth of a centimetre, and now watched it work flawlessly. Two staggered circuits generated a continuous force, with two pistons always reaching the top or bottom at alternate times, turning the engine at high speed, and building up the magnetic field which did not diminish, but on the contrary, rotated in a current flow. The alternate current flowed through the coils, possibly even through air!



*Tesla's AC motor*

Tesla had become friends with the former Mayor of Strasbourg, Bauzin, and one evening invited him to see his motor. Bauzin brought with him a few friends. They watched the motor with interest, but Tesla could see that they did not understand the value of it.

"The subject which I now have the pleasure of bringing to your notice is a novel system of electric distribution and transmission of power by means of alternate current...," he began to explain. Electricity would now be available to everybody. It could

be transferred at long distances, to illuminate dwellings, to run industrial machines and factories. There were fortunes to be made from this motor. Current machinery would soon become obsolete.

Would this motor put men out of work? his visitors wanted to know.

Tesla said, "We can do nothing but what we do. Applause is a gift of the gods."

It's hard to be a man of original mind, Bauzin offered. Louis Pasteur had his struggles, but now everyone adores him. Pasteur loved fermentation and wine-making, and it just so happened, that he, Bauzin, was in possession of a cache of St. Estephe 1801, a most excellent wine, which he had hidden from his liberators.... and he invited everyone to his house that evening.

Several times that summer, Tesla was back in Paris, to seek investors for his motor. He writes:

*... in Paris, in 1883, a prominent French manufacturer sent me an invitation to a shooting expedition which I accepted... On my return to the city that night I felt a positive sensation that my brain had caught fire. I saw a light as tho a small sun was located in it and I past the whole night applying cold compressions to my tortured head..... When a second invitation was extended to me, my answer was an emphatic NO.*

On October 18, 1883, Tesla signed his first engineering contract with George Stout, probably his predecessor in the Strasbourg power plant. He signed his name in the Cyrillic script.

Tesla was a manager, foreman, supply purchaser, chief engineer and pay master. He installs cables, repairs water pipes, oversees repairs, for there are continuous stoppages, caused primarily by faulty installations *by our men*, who did not know what they were doing. He also worked with poorly made insulation conduits, lamp sockets and light bulbs which lasted only a few hours. On August 31, Tesla received from Ivry 1000 electrical switches, installed 309, but returned 241, as unusable. On November 21, there was another short-circuit, and the entire Railroad station

lost power, but by four o'clock the next afternoon, he had restored the power to the ticket office, the post office, the Waiting Room, the platform, and had repaired even the heating system.

He writes to his uncle in Gospic, to get him a birth certificate, which Petar issues, and signs himself, on Oct. 31; and on November 25, the Passport Office in Zagreb issued Tesla a passport, valid for three years, for foreign travel to France, Germany and Russia.

In mid-October 1883, Tesla began to keep a business diary of his communications with the head office in Paris. Entries were made almost daily. This diary, preserved in the Tesla Museum in Belgrade, contains 58 letters – 55 in German, 2 French, 1 English; 15 reports; and 7 tables of inventory – 144 pages. Tesla is scrupulous and thorough in his accounts, employs from two to ten workers at any one time, and pays them at the end of each week, at three Marks per day; he is full of energy, and seems to relish his ability to function in so many languages, especially the big, western, languages. The only man continuously employed is Antal Szigety, his *best man*.

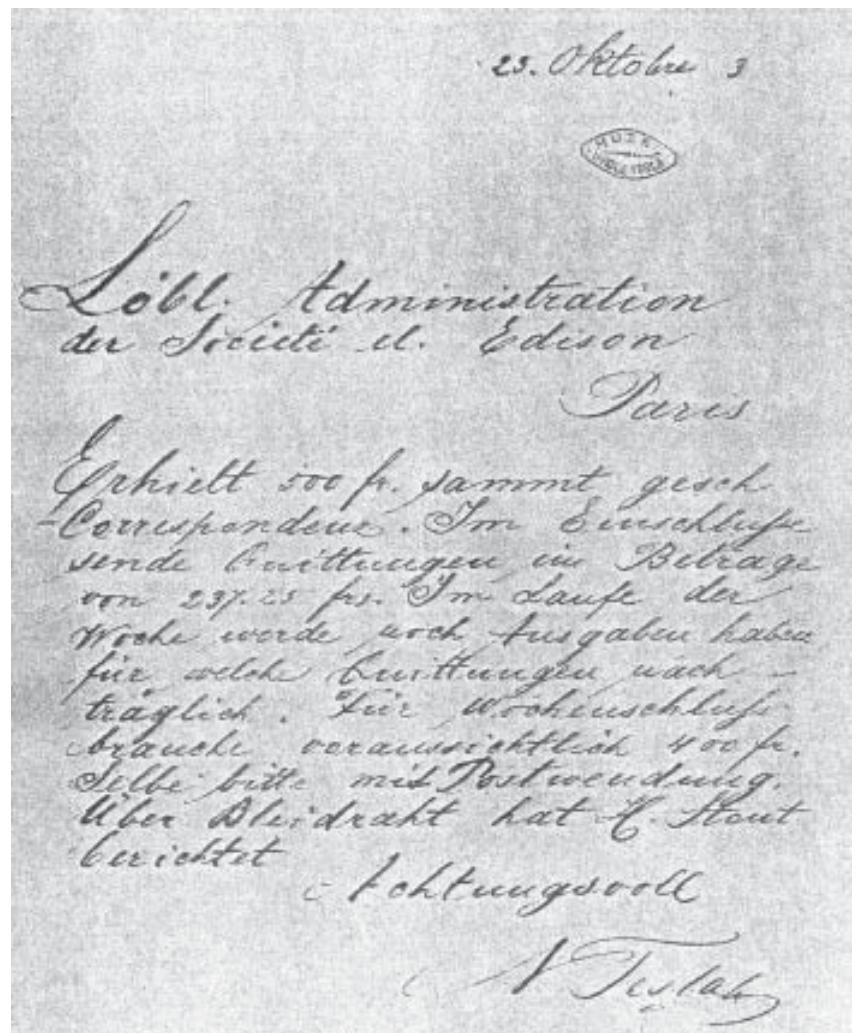
Feuille des dépenses à la Gare de Straßburg depuis le 19. jusqu'au 25. November 1883.

The pay sheet for week ending November 25, 1883

Payé à:			Frs
A. Käser .....	104.50		
A. Szigeti .....	88-	-	
A. Schwartz .....	13.50	-	
Strohl .....	36-	-	
Schmidt .....	36-	-	
Hochhelzer .....	39-	-	
Schupp .....	15-	-	
Schönherr .....	9-	-	
Minstermann .....	7.50	-	
A. Doßmann .....	63.40	-	
Pour petites dépenses .....	17.10	-	
	459.-		Frs.

Straßburg 25. November 1883.  
N. Tesla  
Ing.

On October 23, he writes to Löbl, Administration manager in Ivry-sur-Seine: *I have received 500 Franks, together with the esteemed letter. As an attachment I send receipts in the amount of 237.25. Francs. During the week will have further expenditures for which I will subsequently send receipts. By the end of the week will need, I expect, 400 Francs. I request the same via return mail. Mr. Stout reported about lead wire. Respectfully, N. Tesla.*



N. Tesla's letter to Löbl, Oct. 23, 1883

The Strasbourg plant was accepted by German authorities on February 1, 1884, and Tesla wants to return to Paris. On February 3, he writes to Löbl: *As I have received no word in regard to my return, and I've been ready to leave since the day before yesterday, kindly let me know by telephone if I may return tomorrow by train.*

His health suddenly fails him, and on February 8, there is another letter to Löbl: *....As on Monday, I underwent extremely dangerous surgery, and even now am not out of danger; I beg you to tell me when I may expect to return, for I may not be able to carry out further tasks....*

It is not known what illness had struck Tesla, but it must have been serious, considering his past experience with physicians and his reticence to seek help. I contacted the Strasbourg hospital to find out what ailed Tesla, but this is a hopeless request.

On February 24, Tesla asks Löbl as to whom he is to transfer the responsibilities for the Station before his departure and on February 28, he is back in Paris. He submits his travel expense claim for the train fare, and a carriage ride, in the amount of 154.35 Francs and is reimbursed the same day.

Before returning to Paris, I visit Musée EDF Electropolis in Mulhouse, 100 kilometres south east, but the Museum had relatively little information about Tesla. Earlier in the year, it had shown an exhibit entitled “The Adventure of Electricity” but Tesla was hardly mentioned.

Then I return to Paris.

My younger son was coming from Spain to see me. We were to meet under the Arc de Triomphe at six o'clock. I arrived early, and joined clusters of sightseers milling about, unable to take their eyes off the unbelievably high and vast Arch, wherein were inscribed the names of French imperial armies, including the *Armée de Dalmatie* and many battlefields, including *Montaigne noir*, which would have included Serbs, either as allies or foes, and all of which would have taken untold numbers of sons and fathers. Tesla's great-grandfather Tomo had been awarded a *Legion d'Honneur*, and wandering under the Arch, Nikola would have

been aware of it.

A group of veterans, some in uniform, and some in civilian clothes, led by young French soldiers, were preparing to lay a wreath under the Arch, when two sightseers crossed the path before the ceremonial procession, the young soldiers tracked them down, brought them back, and had them re-cross it in exactly the same place where they had committed the infraction.

It was six now; then past six; and the cold wind was beginning to blow through the Arch, and over the sharp edges and granite surfaces, over the words and names, over the newly laid wreath; Spain is far, travel always unsafe, Paris big - and then he came in sight: young and tall, short-haired, wearing only two shirts, weighed down by his backpack, probably hungry, and I am all the fathers waiting for their children.

For the next two days we visit the Left Bank, the Sorbonne, the Luxembourg Gardens, the Pantheon, the apartments of Victor Hugo, where he wrote a poem about Kosovo, in which “God's soldiers lost their country...”, the house of Balzac, where the staff looked disparagingly on the petty Euros and told us that they missed their own Francs, the Louvre, the Picasso Museum, and early in the morning, ascended Monmartre, while they were watering the streets, and cleaning away the orgiastic debris the night revellers had strewn about. Then we went to see the recently renovated Notre Dame Cathedral.

We sat down. The early builders, who commenced the structure when wolves still roamed the streets of Paris at night, reminded me of Tesla and his achievement. Tesla too, might have, I would like to think, found solace in this sanctuary, for in God's eyes, everything was foreordained and understood, and he had remained conversant with religious rites all this life. The beauty of the place grew on me. The premature, and untrue, news of the Serb victory over the Turks on Kosovo Field in 1389, had traveled westward day and night, reaching Paris within a fortnight, where a *Te Deum* was celebrated, in the presence of the King. When the choir began to sing, and the music and voices expanded, vibrating between a veritable fire of burning candles and stained and richly

coloured windows, I thought that this time would not be out of place at Heaven's gate. On departure, we looked back at the Cathedral.

On his return to Paris, Tesla asked to be paid for extra work, as per a promise given him by one of the managers, plus money owing to him, perhaps, in consideration of saving the company's reputation in Germany, and bringing in untold thousands of dollars of new business. But the managers were disinclined to pay, and sent him from one to another, asked for proof, complained that they had no authority to issue such payments, said there was no extra money at this time, his expectations were unreasonable, expressed regrets, praised his work. For several days, he went from manager to manager, waited, kept explaining, but only encountered the same shaking of heads. He had believed what he had been told. Batchelor, himself an English immigrant in America, recognized a 'loser' when he saw one, and said that he had nothing to do with the initial promise, and did not interfere with plant managers. His own mission was accomplished, the Strasbourg plant was paid for by the Germans, the three Edison companies in Paris had merged, many patents were sold outright, and he was returning to New York.

The hurt was repressed. There were diminishing returns to wealth. Tesla would dismiss this incident as ... *castles in Spain... a circulosis visciosus...* and would not draw any lessons from it, as years later, in America, his *castles in Spain* would only multiply. In a world of carefully crafted contracts, he operated on an honour system. His Quixotic attitude would always be part of his character. But in 1942, at the age of eighty-six, he would send out this proclamation: *Out of this war... a new world must be born... in which there shall be no exploitation of the weak by the strong ... no humiliation of the poor by the violence of the rich; where the products of the intellect... will serve society... and not the individual for achieving wealth.*

Batchelor saw in Tesla a possible challenge to Edison; but Tesla without money, or Tesla working in the company, was no

threat, and invited him to come to America. He would like New York; America was the land of enterprise; the economic and financial conditions there were superior to those in Europe.

Tesla said he was thinking of going to St. Petersburg. Batchelor thought that it would be a mistake, repeated his invitation, and promised to help him get a job with Edison.

Batchelor left for New York in late March or early April, 1884.

Tesla would think kindly of Russia all his life. In the 1920s, Lenin would invite him to help electrify the vast country under the slogan: "Soviet Government + electrification = communism." But Tesla declined, on the grounds that he was too old, busy with his own experiments, and too tied to the United States. In the late 1930s, when he was nearly forgotten and broke, the Soviet Union sent him \$25,000 for the use of his particle beam/electronic shield defense system.

What was he to do? He was almost 28 years old. Ferenc Puskas had returned to Budapest and was already dead; Tivadar was being eased out of Edison's enterprise, and was returning to Budapest too, to resuscitate the dormant Telephone Exchange. He had nowhere to return. He had outgrown the European world. Even in Paris, he had been drawn into a violent argument, when a man called him *un Autrichien* (Austrian) or was it *un autre-chien* (the second dog - the first dog being Germans?) He had to go. Like Descartes, all he wanted was liberty, leisure and a laboratory. He could realize his ideas only in a new world, where there were men with capital and vision. He would go to America. His wealth was in his head, his happiness the freedom of the mind. But he did not have money for a steamship passage to New York. He wrote to uncle Pavle, and Pavle sent the money.

It was toward the end of May, 1884.

*I gathered my few things, bought my tickets,* Tesla wrote, and went to the Gare du Nord, to board a train to L'Havre, where a ship *Saturnia* was waiting.

It is not clear how many pieces of luggage Tesla brought with him to the station, but as he stood ready to board the train, two thieves jostled him and ... *at the moment when the train was*

*about to leave... I realized that I had been robbed, and was missing my tickets and my money* - said to be \$24. The two men, he just caught a glimpse of, had run away ... He looked around in genuine panic. He had only moments to consider – and hopped on the train. He had enough change in his pockets to buy a new train ticket to L' Havre, but there was no ticket for the *Saturnia*. His worldly possessions amounted to the clothes on his back, a notebook with some poems and calculations for a flying machine, and five American cents' worth of French centimes. It is not clear what kind of motor Tesla had in mind for his helicopter-type of machine.

In the train, in the sonorous state of mind and environment, he recalled the number on his steamship ticket. It was something; but judged his chance of boarding the ship at not even fifty-fifty.

The railroad ended at the edge of the immense ocean sea. *The Saturnia* lay at anchor, amidst a forest of masts, smoke stacks and cranes. Tesla told his story to the skeptical ship officials, gave them the number of the ticket and the date of purchase, and proposed that, should anyone claim his berth, it will the man who stole the ticket. If, on the other hand, no one claimed the berth, they should allow him to board the ship.

If the berth remained unclaimed, he was told, they would consider his proposition.

It was the end of the day. All other passengers had long since embarked, but Tesla was still waiting at the foot of the gangplank. No one had claimed his berth, and the officials motioned him to come aboard. He was the last passenger.

From L'Havre the liner sailed to Liverpool, and there, for reasons yet unexplained, Tesla transferred to the *City of Richmond* which, following a troubled voyage that included ... *a mutiny and fights*... docked in New York on June 6, 1884.

Such were Nikola Tesla's European years, and his departure for America.

## EPILOGUE

Except for some three years, which he spent in Pittsburgh, Colorado Springs, Chicago, Milwaukee, and two visits to Europe, Tesla lived the rest of his life in New York, all of it in hotels.

For some years, at the turn of the 19th to the 20th century, he was the most famous scientist in the world – the “man who invented the 20th century.” But in the mephistophelean world of American electrical power and finance, he was, in turn, lionized, exploited, and shunned. His expectations of fairness, and need for acceptance on his own terms, ensured that he would never be more than a “dreamy inventor” and an “impractical mind”, a perpetual visitor. Tesla was quite likely, the last solitary, generalist inventor of authentic genius, the world will see for some time.

His life vanished in his work.

Tesla's aim was to give electrical light to the working men and women world-wide, a task which was well on its way to being accomplished by the end of his life. But his quest for free and wireless transmission of energy, remains a concept out of keeping with the world order as we know it.

He lacked sexual energy, and at 32 declared that he had completely done away with his carnal desire. With women he remained chaste, ironic, aloof. He had a sense of guilt, and some secret pain, an unmentioned torment, a missed turn, surely some mistakes, haunted him throughout his pedantic, onanamistic, life. For years, the gap between his thought and behaviour was minimal. In the 1910s, he would write... *as years went by, the conflict lessened and finally, my will and wish became identical....* but on November 4, 1934, he wrote in one of his occasional *cosmic* poems:

*I haunted thee where the ibis nods,  
From the Bracken's crag to the Upas tree.*

Tesla died on January 7, 1943, the Serbian Orthodox Christmas day, aged 86-and-a-half years. He was skeleton-like emaci-

ated, his voice weak, his thoughts and memories uncoiling, mixing the past and present, the dead and the living... *Mark Twain sat in the room here for an hour, just the other day...* He saw again, *as if it were yesterday*, the home in Smiljan, the white-washed church, the brook, and the little burial ground in the churchyard, at the foot of God's hill.

In the evening, as the sun set, he listlessly watched the electric lights come on, when an electrical charge leaped across the horizon, stained the sky, and disappeared in the dark, and for a moment, he was harnessed to his thinking yoke.

What would that mean now?

*Ah. I have made better lighting than that in my laboratories!*

These are, reportedly, his last recorded words, said, probably, to the New Yorker Hotel maid, Alice Monaghan.

As she left him, he asked her to put the "Do Not Disturb" sign on the outside door handle. She was the last to see him alive, and would be the first to see him diseased, many hours later.

Tesla died in his sleep, about 10:30 that evening, of thrombosis of the heart; without communion; intestate. A death mask was made. Only a dozen people came to view his body lying in state; amongst them his two former secretaries – *Miss Dorothy Skerrett and Miss Muriel Arbus*, who returned every day, to witness a gradual "transfiguration" of Tesla's face into "saintliness." Two thousand attended the funeral service, conducted according to the Serbian Orthodox church rites. No one wept. The body was cremated.

In his book, *Prodigal Genius*, John O'Neil recorded the following story, Tesla had told him in the late 1930s, while they sat in the mezzanine of the Hotel New Yorker.

Tesla speaks:

*I have been feeding pigeons, thousands of them, for years; thousands of them, for who can tell –*

*But there was one pigeon, a beautiful bird, pure white with light gray tips on its wings; that one was different. It*

*was a female. I would know that pigeon anywhere.*

*No matter where I was that pigeon would find me; when I wanted her I had only to wish and call her and she would come flying to me. She understood me and I understood her.*

*I loved that pigeon.*

*Yes, he replied to an unasked question. Yes. I loved that pigeon, I loved her as a man loves a woman, and she loved me. When she was ill I knew, and understood; she came to my room and I stayed beside her for days. I nursed her back to health. That pigeon was the joy of my life. If she needed me, nothing else mattered. As long as I had her, there was a purpose in my life.*

*Then one night as I was lying in my bed in the dark, solving problems, as usual, she flew in through the open window and stood on my desk. I knew she wanted me; she wanted to tell me something important so I got up and went to her.*

*As I looked at her I knew she wanted to tell me – she was dying. And then, as I got her message, there came a light from her eyes – powerful beams of light.*

*Yes, he continued, again answering an unasked question, 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.*

*When that pigeon died, something went out of my life. Up to that time I knew with a certainty that I would complete my work, no matter how ambitious my program, but when that something went out of my life I knew my life's work was finished.*

*Yes, I have fed pigeons for years; I continue to feed them, thousands of them, for after all, who can tell -*



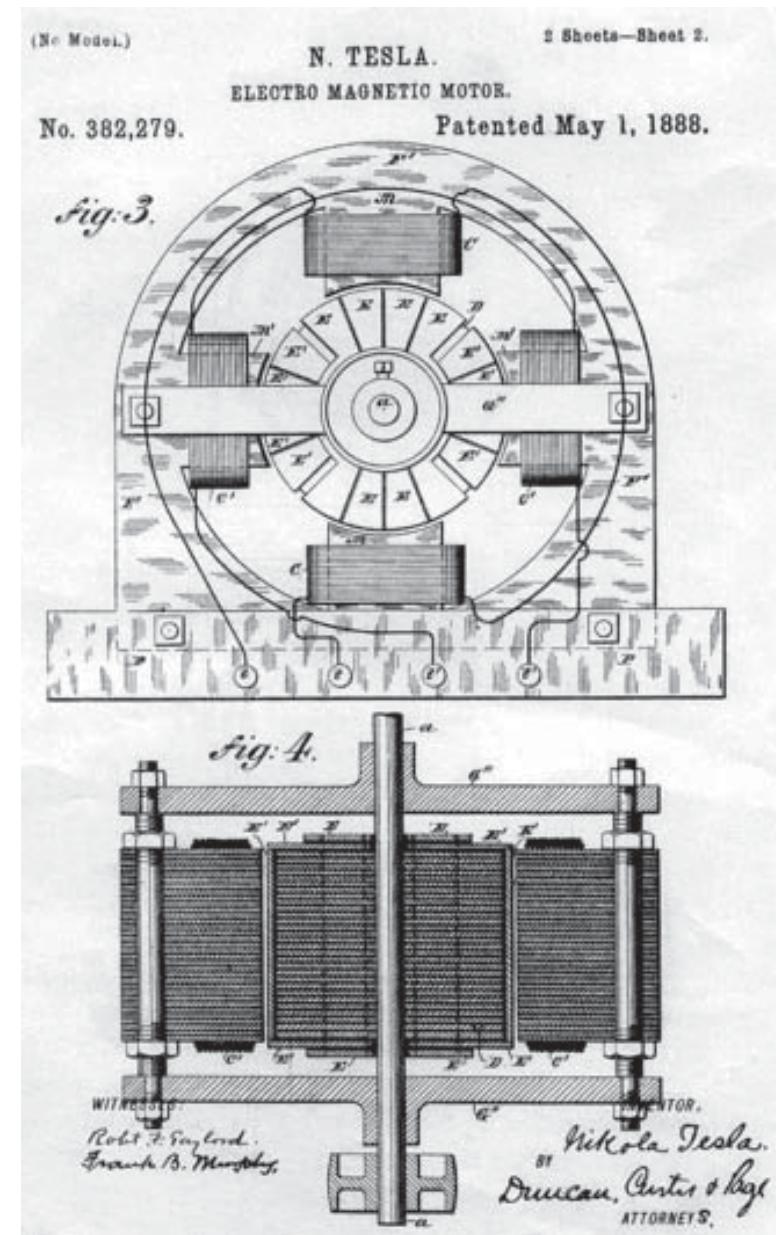
## Appendix I

### The Patents of Nikola Tesla, by country

Argentina –1, Australia – 16, Austria – 4, Brazil – 2, Canada –1, Cuba – 1, Denmark – 1, France – 13, Germany – 14, Great Britain – 16, Hungary – 7, India – 1, Italy – 11, Japan – 1, Mexico – 1, New Zealand – 1, Russia – 4, South Africa – 1, Spain – 4, Sweden – 2, Switzerland – 4, Zimbabwe – 1, and the following 112 Patents registered in the United States, where Tesla had to wait, on the average, seventeen months, to register a patent. How many inventions and patents might Tesla have lost, because he was a perfectionist, and the process so slow?

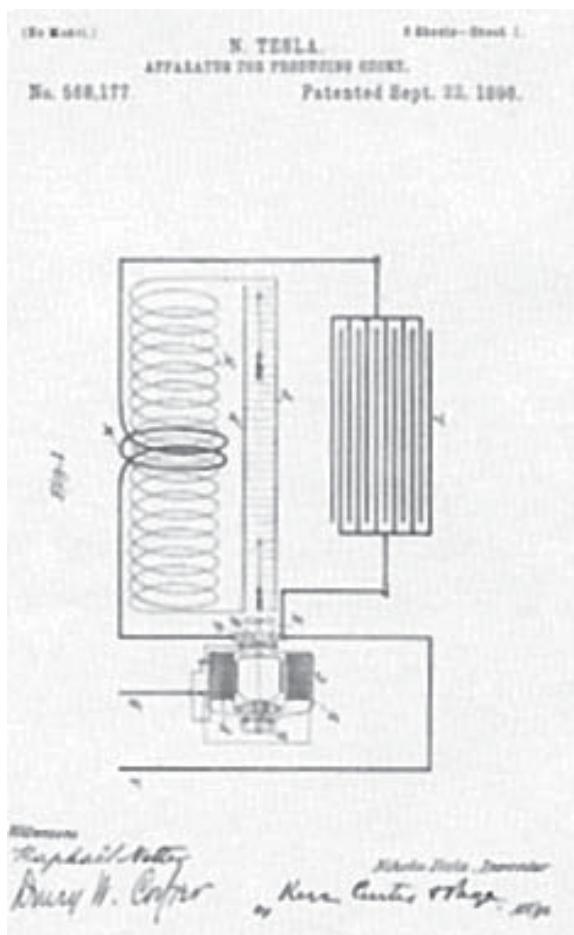
Patent #	Title	Date of filing	Date of registry
334823	Commutator for Dynamo Electric Machines	May 6, 1885	Jan. 26, 1886
335786	Electric Arc Lamp	Mar. 30, 1885	Feb. 9, 1886
335787	Electric Arc Lamp	July 13, 1885	Feb. 9, 1886
336961	Regulator for Dynamo-Electric Machines	May 18, 1885	Mar. 2, 1886
336962	Regulator for Dynamo-Electric Machines	June 1, 1885	Mar. 2, 1886
350954	Regulator for Dynamo-Electric Machines	Jan. 14, 1886	Oct. 19, 1887
359748	Dynamo-Electric Machines	Jan. 14, 1886	Mar. 22, 1887
318968	Electro-Magnetic Motor	Oct. 12, 1887	May 1, 1888
381969	Electro-Magnetic Motor	Nov. 30, 1887	May 1, 1888
381970	System of Electrical Distribution	Dec. 23, 1887	May 1, 1888
382279	Electro-Magnetic Motor	Nov. 30, 1887	May 1, 1888
382280	Electrical Transmission of Power	Oct. 12, 1887	May 1, 1888
382281	Electrical Transmission of Power	Nov. 30, 1887	May 1, 1888
382845	Commutator for Dynamo-Electric Machines	April 30, 1887	May 15, 1888
390413	System of Electrical Distribution	April 10, 1888	Oct. 2, 1888
390414	Dynamo-Electric Machine	April 23, 1888	Oct. 2, 1888
390415	Dynamo-Electric Machine or Motor	May 15, 1888	Oct. 2, 1888
390721	Dynamo-Electric Machine	April 28, 1888	Oct. 9, 1888
390820	Regulator for Alternate Current Motors	April 24, 1888	Oct. 9, 1888

396121	Thermo-magnetic Motor	Mar. 30, 1886	Jan. 15, 1889
401520	Method of Operating Electro-Magnetic Motors	Feb. 18, 1899	Apr. 16, 1889
405858	Electro-Magnetic Motor	Jan. 8, 1889	June 15, 1889
405859	Method of Electrical Power Transmission	Mar. 14, 1889	June 25, 1889
406968	Dynamo Electric Machine	Mar. 23, 1889	July 16, 1889
413353	Method of Obtaining DC from AC	June 12, 1889	Oct. 22, 1889
416191	Electro-Magnetic Motor	May 20, 1889	Dec. 3, 1889
416192	Method of Operating Electro-Magnetic Motors	May 20, 1889	Dec. 3, 1889
416193	Electro-Magnetic Motor	May 20, 1889	Dec. 3, 1889
416194	Electric Motor	May 20, 1889	Dec. 3, 1889
416195	Electro-Magnetic Motor	May 20, 1889	Dec. 3, 1889
417794	Armature for Electric Machines	June 28, 1889	Dec. 24, 1889
418248	Electro-Magnetic Motor	May 20, 1889	Dec. 31, 1889
424036	Electro-Magnetic Motor	May 20, 1890	March 25, 1890
428057	Pyromagneto-Electric Generator	May 26, 1887	May 13, 1890
433700	Alternating Current Electro-Magnetic Motor	Mar. 26, 1890	Aug. 5, 1890
433701	Alternating Current Motor	Mar. 26, 1890	Aug. 5, 1890
433702	Electrical Transformer or Induction Device	Mar. 26, 1890	Aug. 5, 1890
433703	Electro-Magnetic Motor	April 4, 1890	Aug. 5, 1890
445207	Electro-Magnetic Motor	May 20, 1889	Jan. 27, 1891
447920	Method of Operating Arc Lamps	Oct. 1, 1890	Mar. 10, 1891
447921	Alternating Electric Current Generator	Nov. 15, 1890	Mar. 10, 1891
454623	System of Electric Lighting	Not known	June 26, 1891
454622	System for Electric Lighting	April 26, 1891	June 23, 1891
455067	Electro-Magnetic Motor	Jan. 27, 1891	June 30, 1891
455068	Electrical Motor	Mar. 27, 1891	June 30, 1891
455069	Electric Incandescent Lamp	May 14, 1891	June 30, 1891
459772	Electro-Magnetic Motor	April 6, 1889	Sept. 22, 1891
462418	Method of and Apparatus for Electrical Conveyors & Distribution	Feb. 4, 1891	Nov. 1, 1891
464666	Electro-Magnetic Motor	July 13, 1891	Dec. 8, 1891
464667	Electrical Condenser	Aug. 1, 1891	Dec. 8, 1891
487796	System of Electrical Transmission of Power	May 15, 1888	Dec. 13, 1892
511559	Electrical Transmission of Power	Dec. 8, 1888	Dec. 26, 1893



- 511560 System of Electrical Power Dec. 8,1888 Dec. 26,1893  
Transmission  
511915 Electrical Transmission of Power May 15,1888 Jan. 2, 1894  
511916 Electric Generator Aug.19,1893 Jan. 2,1894

512340	Coil for Electro-Magnets	July 7, 1893	Jan. 9, 1894
514167	Electric Conductor	Jan. 2, 1892	Feb. 6, 1894
514168	Means for Generating Electric Currents	Aug. 2, 1893	Feb. 6, 1894
514169	Reciprocating Engine	Aug.19,1893	Feb. 6, 1894
514170	Incandescent Electric Light	Jan. 2, 1892	Feb. 6, 1894
514972	Electric Railway System	Jan. 2, 1892	Feb. 20, 1894
514973	Electric Motor	Dec. 15, 1893	Feb. 20,1894
517900	Steam Engine	Dec.29, 1893	April 10,1894
524426	Electromagnetic Motor	Oct.20,1888	Aug.14,1894
555190	Alternating Motor	May 15,1888	Feb. 25, 1896
567818	Electric Condenser	June 17,1896	Sept.15,1896
568176	Apparatus for Producing Electric Currents of High Frequency and Potential	April 22,1896	Sept.22,1896
558177	Apparatus for Producing Ozone	June 17,1896	Sept.22,1896
568178	Method of Regulating Apparatus for Producing Currents of High Frequency	June 20,1896	Sept.22,1896
568179	Method of and Apparatus for Producing Currents of High Frequency	July 6,1896	Sept.22,1896
568180	Apparatus for Producing Electrical Currents of High Frequency	July 9,1896	Sept.22,1896
577670	Apparatus for Producing Electrical Currents of High Frequency	Sept.3,1896	Feb.23, 1897
577671	Manufacture of Electrical Condensers, Coils, etc	Nov.5, 1896	Feb.23, 1897
583953	Apparatus for Producing Currents of High Frequency	Not Known	June 8, 1896
593138	Electrical Transformer	Mar. 20, 1897	Nov. 2, 1897
609245	Electrical-Circuit Controller	Dec. 2, 1897	Aug. 16, 1898
609246	Electric-Circuit Controller	Feb. 28, 1898	Aug. 16,1898
609247	Electric-Circuit Controller	Mar. 12,1898	Aug.16,1898
609248	Electric-Circuit Controller	Mar. 12,1898	Aug.16,1898
609249	Electric-Circuit Controller	Mar. 12,1898	Aug.16,1898
609250	Electric Igniter for Gas-Engines	Feb.17,1897	Aug.16,1898
609251	Electrical-Circuit Controller	June 3, 1897	Aug.16,1898
611719	Electrical-Circuit Controller	Dec.10, 1897	Oct. 4, 1898
613735	Electric Circuit Controller	April 19,1898	Nov.8,1898
613809	Method of and Apparatus for Controlling Mechanism of Moving Vessels or Vehicles	July 1,1898	Nov. 8, 1898
613819	Filings Tube	Not Known	Nov. 8, 1898



645576	System of Transmission of Electrical Energy*	Sept.2,1897	March 3,1900
649621	Apparatus for Transmission of Electrical Energy*	Sept.2,1897	May 15, 1900
655838	Method of Insulating Electric Conductors	June 15, 1900	Aug. 14, 1900
685012	Means for Increasing the Intensity of Electrical Oscillations	Mar. 21, 1900	Oct.22, 1901
685953	Method of intensifying and Utilizing Effects Transmitted Through Natural Media	June 24, 1899	Nov. 5, 1901
685954	Method of Utilizing Effects Transmitted Through Natural Media	Aug. 1, 1899	Nov. 5, 1901

685955	Apparatus for utilizing Effects Transmitted From a Distance to a Receiving Device Through Natural Media	Aug.1, 1899	Nov. 5, 1901
685956	Apparatus for Utilizing Effects Transmitted Through Natural Media	Aug. 1, 1899	Nov. 5, 1901
685957	Apparatus for the Utilization of Radiant Energy	Mar. 21, 1901	Nov.5,1901
685958	Method of Utilizing Radiant Energy	Mar. 21, 1901	Nov. 5, 1901
723188	Method for Signaling	July 16,1900	Apr. 14 1903
725605	System of Signaling	July 16, 1900	Apr. 14,1903
787412	Art of Transmitting Energy Through the Natural Medium	May 16,1900	Apr. 18, 1905
1061142	Fluid propulsion	Oct. 21, 1909	May 6, 1913
1062206	Turbine	Oct. 21, 1909	May 6, 1913
1113716	Fountain	Oct. 28, 1913	Oct. 13, 1914
1119732	Apparatus for Transmitting Electrical Energy**	Jan. 8, 1902	Dec. 1, 1914
1209359	Speed Indicator	May 29, 1914	Dec. 19, 1916
1266175	Lighting-Protector	May 6, 1916	May 14, 1918
1274816	Speed Indicator	Dec. 18,1916	Aug. 8, 1918
1314718	Ship's Log	Dec. 18, 1916	Sept. 2, 1919
1329559	Valvular Conduit	Feb. 21, 1916	Feb. 3, 1920
1365547	Flow Meter	Dec. 18, 1916	Jan. 2, 1921
1402025	Frequency Meter	Dec. 18, 1916	Jan. 3, 1922
1655113	Method of Aerial Transportation	Not Known	Jan. 3, 1928
1655114	Apparatus for Aerial Transportation	Not Known	Jan. 3, 1928

\*These two patents are the basis of modern wireless communications. Tesla was a perfectionist, and Guillermo Marconi, a more commercial man, "got a jump" on him, using, or in Tesla's words, *pirating, seventeen of his patents* on his way to fame and fortune. But on June 21, 1943, five months after Tesla's death, the Supreme Court of the United States annulled Marconi's patent, and handed down the decision that Tesla "had anticipated all other contenders... thus making subsequent patents on the subject null and void," and proclaimed Nikola Tesla the true inventor of radio. Tesla himself found listening to radio *too disruptive*.

\*\* Twelve years to register this patent! Westinghouse Company -- *whose business is largely founded on my inventions* - exploited this invention *by force*. Reportedly, in 1934 when Tesla was already 77 years old, Westinghouse agreed to pay his rent, and a consultancy fee of \$125 per month, but there is no evidence if or how long this was paid.

## Appendix II

The “**Tesla – T**” is the scientific unit of magnetic flux density. It was named in Tesla’s honour, at the meeting of the International Electro-technical Commission Committee, in Munich, on June 27, 1956.

### Honorary Doctorates Awarded to Nikola Tesla

Technical School, Vienna, 1908  
 University of Belgrade, 1926  
 University of Zagreb, 1926  
 Technical School, Prague, 1936  
 Technical School, Graz, 1937  
 Université de Poitiers, 1937  
 Technical School, Brno, 1937  
 Université de Paris, 1937  
 Polytechnical School, Bucharest, 1937  
 Université de Grenoble, 1938  
 University of Sofia, 1939

### Orders and Decorations

The Order of St. Sava, II Class, Government of Serbia, 1892  
 The Order of Independence of Montenegro, 1895  
 The Order of St. Sava, I Class, Government of Yugoslavia, 1926  
 The Order of Yugoslav Crown, 1931  
 The Order of the White Eagle, I Class, Government of Yugoslavia, 1936  
 The Order of the White Lion, I Class, Government of Czechoslovakia, 1937  
 The Medal of Universite de Paris,, 1937  
 The Medal of the University of St. Klement, Sofia, 1939

### European Places of Residence

One June 11, 1921, in a letter to George M. Mungao, Tesla wrote...  
*I am Serbian... the province where I was born was at that time merely under the political rule of Austria which has nothing to do with nationality.*

In the 20th century the old Austrian empire imploded into a dozen new states, and Tesla’s former places of residence may now be found in the following countries:

1856-63 - The Serbian Orthodox Church Parish residence, Smiljan, Croatia  
 1863-70 - Gospic, Croatia  
 1870-73 - Rakovac 42, in Karlovac, Croatia  
 1873-75 – Gospic  
 1875- Autumn 1878 – Attemsgasse 8, Hans-Sachsgasse 10, Jahngasse 5, Heinrichstrasee 11, Graz, Austria  
 1878- March 79 – Maribor, Slovenia  
 1879- Jan. 80 – Gospic  
 Jan. 1880- Jan. 81 – Smeckach 13, Prague, Czech Republic  
 Jan. 1881 – April 82 – Budapest (on the Pest side), Hungary  
 April 1882 – Feb. 83, Saint Marcel Boulevard, Paris, France  
 Feb. 1883 – Feb. 84, probably Weissturmring Strasse 8, Strasbourg, then in Germany, today in France  
 March – May 1884, street address not known, Paris, France