



# The Tesla vs. Marconi Radio Patent Dispute

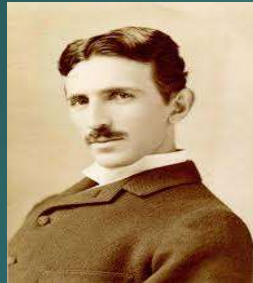
TESLA VS. MARCONI  
BY LYDIA EMANUEL

Who invented “radio”?



Marconi

OR



Tesla

- ▶ When you hear terms like the Marconi Company, Marconi Radio, Marconi Men, Marconi Awards, or even consult some older textbooks, you might conclude that Marconi was the original radio pioneer. The story of who invented radio is one of melodramatic ups and downs, and a controversy that took over 40 years and the U.S. Supreme Court to resolve.

# Who was Marconi?



Marconi's Birthplace in Villa Griffone, Bologna with his tomb in the foreground

- ▶ He was an inventor and engineer born to nobility in 1874, in Italy, with an affluent Italian father and Irish mother whose family was of Jameson Whiskey Distillery fame.<sup>1</sup>
- ▶ Marconi studied the work of Heinrich Hertz (radio waves) and as a youth, was successful in generating a signal that travelled for about a mile on his estate.
- ▶ Lacking any real support from Italy for his discoveries, he moved at the age of 22 to England with his mother, and there he secured investors and wealthy backers including the British Post Office<sup>2</sup>. (His first and second wives were also descended from aristocracy, which helped him establish numerous connections throughout life).<sup>3</sup>
- ▶ About a year later, he applied for his first British patent after sending a signal for 12 miles, and the next year he set up a wireless station that gave Queen Victoria the ability to send a message to her son aboard the royal yacht.<sup>4</sup>



## Who was Tesla?

- ▶ He was a scientist and inventor of Serbian descent born in 1856 who immigrated to the U.S. in 1884, arriving in New York with 4 cents in his pocket.<sup>5</sup>
- ▶ He worked for Thomas Edison until Edison refused to give him a promised \$50,000 bonus, saying he had been joking. Then Tesla's subsequent invention of AC current deepened their rift; Tesla quit and went to work with George Westinghouse.
- ▶ Westinghouse was very optimistic about AC Power, and Tesla by then had filed 40 patents.<sup>6</sup> Royalties from them could have brought Tesla a small fortune and possibly made him one of the richest men in the world<sup>7</sup> until...
- ▶ An economic downturn threatened to bankrupt Westinghouse's company if he had to pay for Tesla's patents and their royalties so...
- ▶ Tesla voluntarily assigned them all to Westinghouse in the hope he could continue to develop his ideas if the company stayed afloat.<sup>8</sup>

# What happened then?

- ▶ With little money for research and discovery, Tesla quietly focused on a new interest called 'wireless' which was for all intents and purposes, 'radio'.<sup>9</sup>
- ▶ In 1893 in St. Louis, he presented the first ever public lecture and demonstration of radio communication," predicted wireless communication, and employed apparatus with all the elements of spark and continuous wave that were incorporated into radio".<sup>10</sup>
- ▶ In early 1895 he was ready to transmit a signal for 50 miles to West Point, New York but.... a fire destroyed his lab and all his work!<sup>11</sup>



Free to Use Images Unsplash Photos  
for Everyone License, by Christopher  
Burns, Burn it to the Ground 2017

# Tesla didn't give up!

In 1900 on March 20th, Tesla received the first US radio patent which he submitted in September 1899.

20 Mar.

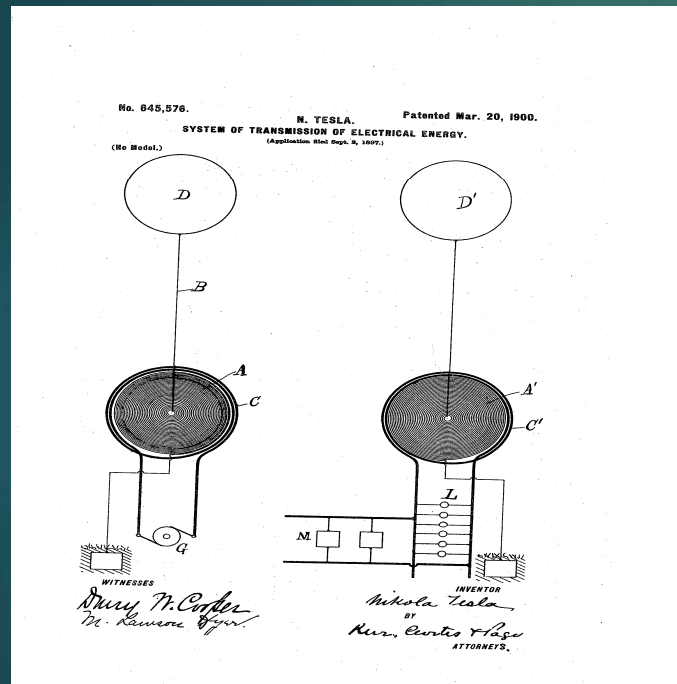
15 May 1900

On May 15, 1900 he received a second patent that he applied for in February that same year.<sup>12</sup>

- ▶ U.S. Patent 645,576: System of Transmission of Electrical Energy
- ▶ U.S. Patent 649,621: Apparatus for Transmission of Electrical Energy



# Have a quick look at Tesla's U.S. Patent 645,576:



# And what was Marconi up to?



- ▶ Marconi took out his first British wireless telegraphy patent in 1896 with a 2-circuit system.
- ▶ In 1897 he formed the (British) Marconi Wireless Telegraph Company (later called the Marconi Company) and by 1900 it was a roaring success, with the stock rising from \$3 to \$22 a share <sup>13</sup>. Marconi was hailed as a handsome international nobleman with connections to aristocracy, and prominent American investors who included Edison and Andrew Carnegie. <sup>14</sup>
- ▶ **On November 10, 1900 he also pursued a U.S. radio patent application! <sup>15</sup>**



# Tension began to build....

- ▶ The U.S. Patent Office took 3 years to rule on Marconi's patent application, since Tesla's had already been applied for and issued earlier. The U.S. Patent Examiner also dismissively said the following about Marconi's patent application, in rejecting it on October 15<sup>th</sup> in 1903:
- ▶ ***“Many of the claims are not patentable over Tesla patent numbers 645,576 and 649,621, of record, the amendment to overcome said references as well as Marconi's pretended ignorance of the nature of a “Tesla oscillator” being little short of absurd. Ever since Tesla's famous lecture on alternating current of high frequency, delivered before the American Institute of Electrical Engineers in 1891...the term “Tesla oscillator” had become a household word...”***<sup>16</sup>



# The tide turned on Tesla...



- ▶ For reasons unknown, but with plenty of speculation about politics and pressure, <sup>17</sup> the U.S. Patent Office reversed its 1903 decision and awarded Marconi the radio patent a few months later, in 1904!
- ▶ Interestingly, and several years before that occurred, Marconi had already established a U.S. subsidiary of the original British Telegraph and Wireless Company commonly called American Marconi.
- ▶ **One of the consulting engineers on it was none other than Tesla's former nemesis, Edison...** <sup>18</sup>

# Things were brewing in Europe...

- ▶ In or around 1903, Germany was becoming concerned with all the competition coming from the British and American Marconi companies.
- ▶ To better consolidate their assets and efforts, Germany encouraged the amalgamation of various German wireless telegraph outfits into a single company, commonly known as Telefunken.<sup>19</sup>
- ▶ Telefunken Germany spun off their own U.S.-based subsidiary to directly challenge American Marconi in America's own back yard, called the Atlantic Communication Company.
- ▶ **Nikola Tesla was one of their consultants!**<sup>20</sup>





## World War 1 came....

When the war broke out, the British cut all the undersea telegraph cables from Germany. However, there was a great concern about the German subsidiary in the U.S., namely the Atlantic Communication Company, that could be a national security threat since they could still communicate with Germany.<sup>21</sup>

- ▶ The British Marconi parent company engineered a strategic lawsuit in 1914 by asking American Marconi to sue the Atlantic Communication Company for patent infringement to try to cripple this security threat.<sup>22</sup>
- ▶ Nikola Tesla, with evidence of his two U.S. patents from 1900, was a strong key witness against American Marconi, and American Marconi asked for a postponement in 1915, ostensibly because of the war requiring Guglielmo Marconi's attention back in Italy.<sup>23</sup>

# Tesla had enough!



- ▶ We can probably surmise that Tesla was upset when the U.S. Patent Office reversed its earlier decision and awarded Marconi patent rights in 1904.
- ▶ He was probably further unhappy when Marconi was awarded the Nobel prize in 1909.
- ▶ **It was perhaps that much more infuriating when Marconi admitted in his Nobel Prize acceptance speech that he didn't really understand how his invention worked!**<sup>24</sup>
- ▶ Marconi continued amassing various accolades and the telegraph distress call placed by the sinking Titanic ship (1912) that brought about the rescue of 700 passengers, was perceived as another Marconi triumph.<sup>25</sup>
- ▶ With the postponement of the lawsuit against the Atlantic Communication Company, and the Nobel Prize insult, Tesla decided in 1915 it was time to personally sue Marconi for patent infringement over the 1904 patent ruling.<sup>26</sup>





An important note of explanation...

**The term “Tesla vs. Marconi” has become a popular way to describe the 4-decade long saga that unfolded, prior to the courts definitively deciding whether Tesla or Marconi was the first radio pioneer. However, apart from his personal lawsuit against Marconi in 1915, the great majority of the litigation only involved Tesla indirectly and wasn’t about who was ‘the first’.<sup>27</sup>**

## A Flurry of Interwoven Lawsuits:

1. The 1914 lawsuit between American Marconi and Atlantic Communications over patent infringement
2. Tesla’s 1915 personal lawsuit against Marconi for losing the patent in 1904
3. The 1916 Marconi Wireless Telegraph Co. of America suing the U.S. government for damages from using its wireless equipment in WW1.

## Powerful and complicated forces were at play...

### The U.S. Government Took Control of the Radio Business

- ▶ After WW1 ended, the U.S. government didn't want to relinquish their war-time control of radio, nor return the American Marconi subsidiary to the British, citing new security issues. They pressed for U.S. ownership and eventually General Electric purchased the Marconi assets and paved the way for their new subsidiary to be called the Radio Corporation of America, or more famously, RCA.<sup>28</sup>

### A Much Protracted American Marconi Company Lawsuit

- ▶ Although American Marconi sued the U.S. government (1916) in Claims Court for unlawfully using or buying its equipment during WW1, that lawsuit was more about whether the Company could collect royalties for later improvements to wireless communications used by the U.S. government. They kept up the claim against the government **even after** they sold most of their assets to General Electric.<sup>29</sup>



By all accounts, the complicated lawsuit between American Marconi and the government didn't look like it would be resolved quickly, and as for Tesla's personal lawsuit against Marconi for the 1904 patent decision reversal, he resigned himself to "radio silence" <sup>30</sup> when he realized he was going up against a very large monopoly with very deep pockets, and he ran out of funds ... so he had to drop his personal lawsuit against Marconi.

One of the top ten and biggest patent disputes, turned out to be the 1916 lawsuit involving radio, in which the Court of Claims subsequently ruled in 1935 that the Marconi patents had not been infringed .<sup>31</sup>

► By virtue of the decision rendered in 1935, the fundamental Marconi patent was invalidated because the ruling found it was anticipated by Tesla and other earlier inventors.<sup>32</sup>



Was it time for Tesla to celebrate? Not quite.....

# It had taken 19 years....

► Although the 1935 decision gave hope to restore the original Tesla patent that Marconi took from him in 1904, it gave hope also going forward. However, “no patent is truly safe”<sup>33</sup> and “patent law is fickle”<sup>34</sup> so an additional 8 years of waiting ensued in order to learn if the 1935 decision would continue to be upheld, or if all that had been added would again be lost.







It wasn't until June of 1943 that the U.S. Supreme Court upheld the 1935 decision on appeal. It was rendered some 6 months after Tesla's death. Marconi didn't live to learn the ultimate outcome either, as he died in 1937.

The Supreme Court decision confirmed Tesla's two patents that were granted in 1900, pointing to the Tesla lecture/ demonstration in St. Louis in 1893 as a critical indicator, and affirming that he was the first to demonstrate and patent the principles of radio.<sup>35</sup>

## The Supreme Court made some additional rulings:

- ▶ Besides affirming the work and patents of Tesla, the Supreme Court also affirmed the earlier work of two other individuals, John S. Stone (American mathematician, physicist and inventor), and Oliver Lodge, a British physicist.
- ▶ The Court found that Lodge and Stone developed other features **after** Tesla's patents but **before** Marconi's. <sup>36</sup>
- ▶ The Court also affirmed that Marconi's reputation "as the man who first achieved successful radio transmission rests on his original patent ...which is not here in question". <sup>37</sup>
- ▶ It was not a unanimous ruling, with 5 judges being in the majority, with 1 abstention and 3 dissents. <sup>38</sup>



“Marconi's real contributions are more engineering and commercial rather than theoretical. He took the basic ideas and inventions of others and improved upon them and made them practical business successes. Tesla was almost the opposite. He created original ideas and proved them mathematically and physically, patenting some and not others. Some of his best ideas like the AC Induction motor was a commercial success which brought him fame but not riches. Marconi, of course, was fabulously rich” .

SUMMED UP VERY SUCCINCTLY BY LOUIS E. FRENZEL

;

# Conclusion



- ▶ Tesla was undoubtedly a brilliant inventor and scientist and his fame and fortune alternately rose and fell dramatically over the course of his lifetime.
- ▶ He arrived in the USA with little money, and it seemed whatever financial advantage he gained, he just as quickly lost through bad luck, bad timing, bad financial outcomes, or betrayal by people he trusted.
- ▶ Tesla above all else, was driven by his desire to invent and discover, and as a result, far less focused on protecting the rights to his work or personally flaunting his own achievements, much less making a profit from them, as the Tesla vs. Marconi story shows.

## List of Cited Sources and References

- ▶ PBS: Tesla-Master Of Lightning-Who Invented Radio; [www.pbs.org/tesla/11/11\\_whoradio.html](http://www.pbs.org/tesla/11/11_whoradio.html); notes: <sup>11,13,14,15,16,17, 18, 26, 33</sup>
- ▶ [www.mercurians.org/1998\\_Fall/Misreading](http://www.mercurians.org/1998_Fall/Misreading) the Supreme Court; A. David Wunsch; notes <sup>31,38</sup>
- ▶ [www.history.com/topics/inventions/guglielmo-Marconi](http://www.history.com/topics/inventions/guglielmo-Marconi); notes <sup>1,2,3,4,24,25,30</sup>
- ▶ [teslauniverse.com/nikola-tesla/articles/tesla-invented-rad...](http://teslauniverse.com/nikola-tesla/articles/tesla-invented-rad...); Tesla Invented Radio, Not Marconi; Quotation by Louis E. Frenzel <sup>34</sup>
- ▶ Missouri Law Review, Volume 73, Issue 3, Summer 2008: Tesla, Marconi, and the Great Radio Controversy: Awarding Patent Damages without Chilling a Defendant's Incentive to Innovate; Christopher A. Harkins <https://scholarship.law.missouri.edu/cgi/viewcontent.cgi?article=3783&context=mlr> pages 745-759; notes <sup>5,6,7,8,9,10,12,30,35, 36,37</sup>
- ▶ <https://caselaw.findlaw.com/us-supreme-court/320/1.html>
- ▶ [Tesla, Inventor of the Electrical Age](#), W. Bernard Carlson, p. 376-377; notes <sup>19,20,21,22,23,32</sup>
- ▶ [Wikipedia: The Marconi Company](#)<sup>28</sup>; Guglielmo Marconi; John S. Stone; Oliver Lodge
- ▶ The Top Ten Patent Wars-Radio #9, Law of Technology, Dorsey & Whitney LLP, Aug. 21. 2018 <sup>27, 29</sup>
- ▶ Legal Language Blog, Patent Law Rewrites History, [www.legallanguage.com/legal-articles/patent-law-radio](http://www.legallanguage.com/legal-articles/patent-law-radio), Julia, Dec. 14, 2016 <sup>34</sup>



# Image Sources and Credits

- ▶ Image of electrified tower: Gerd Altmann, Pixabay, Brays-3806385\_1920.jpg
- ▶ Tesla head photo: simple.Wikipedia.org; Marconi head photo: PICRYL The World's Largest Public Domain Source, 0/01/1903, Library of Congress, <http://www.loc.gov/>
- ▶ Villa Marconi .jpg public domain Wikipedia Commons
- ▶ Tesla's birthplace: Smiljan Memorial Centre, modified. .Jpg Wikimedia Commons public domain
- ▶ Fire: Free to Use Images Unsplash Photos for Everyone, License by Christopher Burns, Burn it to the Ground, 2017
- ▶ Tesla's drawing and patent 645,576, Wikipedia, Tesla's Patents
- ▶ Marconi's early residence after arriving at age 22 (1896) at 71 Hereford Road, Bayswater, London, displaying the blue plaque Heritage Designation by left pillar.; Wikimedia Commons, by Spudgun67 under Creative Commons Share Alike International License
- ▶ Image of Red tape, Royalty Free Vector Clip Art Illustration CoolClips.com
- ▶ US Patent Office (1866) Library of Congress [www.loc.gov/pictures/item/2016652648](http://www.loc.gov/pictures/item/2016652648)
- ▶ Early Telefunken logo with sparks ("funken"), Fandom Logopedia, Creative Commons Attribution-Share- Alike license 3.0 CC-BY-SA
- ▶ Red Cross Nurse of WW1:Studenthandouts.com100% free printables
- ▶ Image of Cheering Silhouettes, Clipart #2184058 (license personal use) <https://clipart-library.com/clipart/pi5rodoMT.htm>
- ▶ US Supreme Court photo : Supreme -Court- public -domain-photo. .jpg-EarthRights International