

Granville T. Woods



Electrical and Mechanical Engineer

Granville T. Woods, born in Ohio on April 23, was an electrical and mechanical engineer and inventor.

He received formal schooling until the age of 10, after which he became an apprentice in a railroad machine shop and continued his studies in night school.

In the 1870s and early 1880s, he held many jobs: he worked on railroads, at a steel mill, and as a chief engineer on a steamship. Eventually he returned to Ohio where he began his career as an inventor.

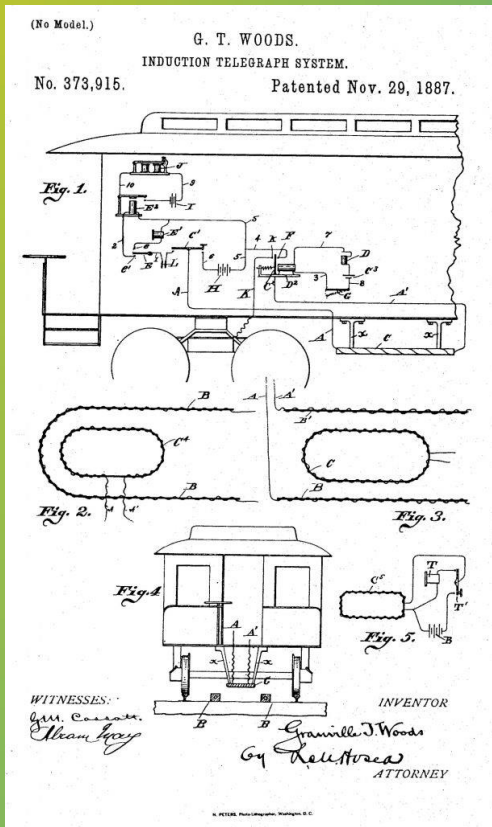


BORN: April 23, 1856

KNOWN FOR: Innovating rail telegraphy, third rail technology, and more!

LOCATION: Ohio, Missouri, and New York

DIED: January 30, 1910



Patent for Induction Telegraph

In 1884 Woods received his first patent. In 1887 he received his second patent for the induction telegraph. This became the basis of the **Synchronous Multiplex Railway Telegraph**, which used induction. A large battery-powered magnet was put underneath a train and attached to a telegraph or telephone in the train operator's cab. When turned on, the apparatus would give off a magnetic force. Telegraph lines parallel to the tracks would also emit a similar but opposite magnetic force. This allowed messages to be sent to or from a moving train in any direction (multiplex). Train operators and dispatchers could send morse code (telegraph), or with the addition of a telephone receiver, could have a real time conversation (synchronous), and show the location of a moving train on a dispatcher's display board.

Before he could patent this invention, Woods became ill with smallpox as other inventors continued to work on similar technology. During this time, he read in Scientific American magazine that an inventor by the name of Lucius Phelps had already patented a very similar design. Granville T. Woods went to court and was able to prove that his work predated that of Phelps. Interference cases such as this one were common among inventors.

Granville T. Woods established Woods Electrical Company in 1886, but unfortunately, he was unable to generate significant income and his business partner ultimately pushed him out of the company. Institutionalized racism kept Black Americans from opportunities in technical fields and lack of connections made it difficult for Black inventors to find support to further their research. Despite this, Woods found success and continued his career in New York.

Throughout his career Granville T. Woods often didn't have financial support and had frequent patent interference cases. Of his 45 US patents, he had more than 12 court battles for ownership, and he did not garner the same respect or funding that his white counterparts received. He sold many of his patents to popular Electric companies such as American Bell Company, Westinghouse, and General Electric.

Granville Woods died on January 30th, 1910 at the age of 53. His important innovations paved the way for better communication, improved safety on trains, and even rollercoasters!

Vocabulary

Invention- something new developed after study and experiment

Innovation- a new idea, device or method

Patent- a set of rights granted by the government to an inventor, allowing them legal ownership of their invention or innovation

Discussion Questions

- 1) Granville T. Woods was self-taught. Have you ever had to learn something on your own?**
- 2) What would you like to invent? What problems would that invention solve?**
- 3) Can you think of some of the things you use every day that didn't always exist? Hint: television and light bulbs are two examples!**
- 4) Can you think of how or why innovations might be important?**