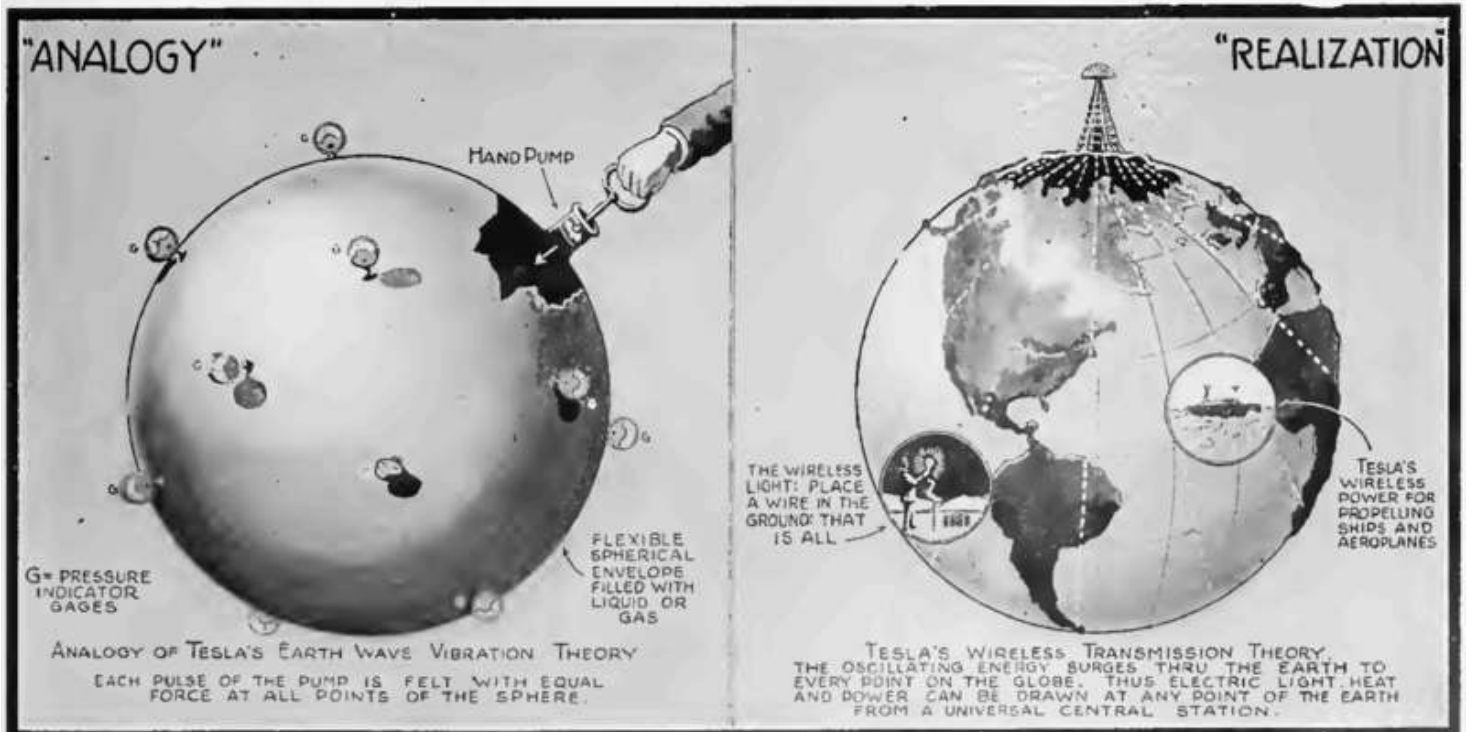


File:Tesla wireless power theory - Electrical Experimenter Feb 1919.png

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Captions

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English

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Summary

Description **English:** Diagram by US inventor [Nikola Tesla](#) explaining how his proposed revolutionary worldwide wireless power system would work, from a 1919 article in Hugo Gernsback's electrical magazine. Tesla was obsessed with the idea of transmitting electric power without wires from power plants directly into homes and factories, using his Tesla coils. He envisioned a "World Wireless System" consisting of a network of "magnifying transmitter"s, large grounded Tesla coils, which would apply pulses of ground current, causing [resonant electrical oscillations](#) in the entire

Earth. A "receiver", consisting of a tuned circuit connected between an capacitive "antenna" and ground, tuned to the resonant frequency of the transmitter, could receive the power anywhere on Earth, without diminution with distance. The lefthand drawing shows by a mechanical analogy how he thought the system would work. He regarded electric charge as analogous to a pneumatic fluid filling the Earth. His grounded magnifying transmitter was like a pump (*upper right*) applying pulses of pressure. His grounded wireless receivers were like meters connected to the Earth. Each pulse of increased pressure could be felt anywhere on Earth, shown by the pressure gauges. The righthand drawing shows the system; the oscillating Earth currents created by the magnifying transmitter at top could be tapped anywhere on Earth to power light bulbs, vehicles or aircraft.

In 1899-1900 at his Colorado Springs lab Tesla experimented with a huge 12 million volt Tesla coil, but was not able to transmit power farther than about 1800 feet. Starting in 1901 he constructed a prototype magnifying transmitter, now called Wardenclyffe tower, at Shoreham, NY, but by 1904 his investors had pulled out and it was never completed. Tesla rejected the new theory of Hertzian electromagnetic waves (radio wave) and his "ground current" ideas were based on outdated 19th century notions. Modern scientists recognize that the resonant inductive and capacitive coupling he used is a "near field" effect and cannot transmit power long distances. In the ensuing 100 years, all efforts to transmit power long distances by Tesla's methods have failed. However, Tesla never gave up his theories, and maintained until his death in 1934 that wireless power was "just around the corner".

Date	February 1919
Source	Retrieved March 8, 2015 from <u>Nikola Tesla, "Famous Scientific Illusions" in <i>Electrical Experimenter</i> magazine, Experimenter Publishing Co., New York, Vol. 6, No. 10, February 1919, p. 693 (http://www.americanradiohistory.com/Archive-Electrical-Experimenter/EE-1919-02.pdf) on http://www.americanradiohistory.com</u>
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