

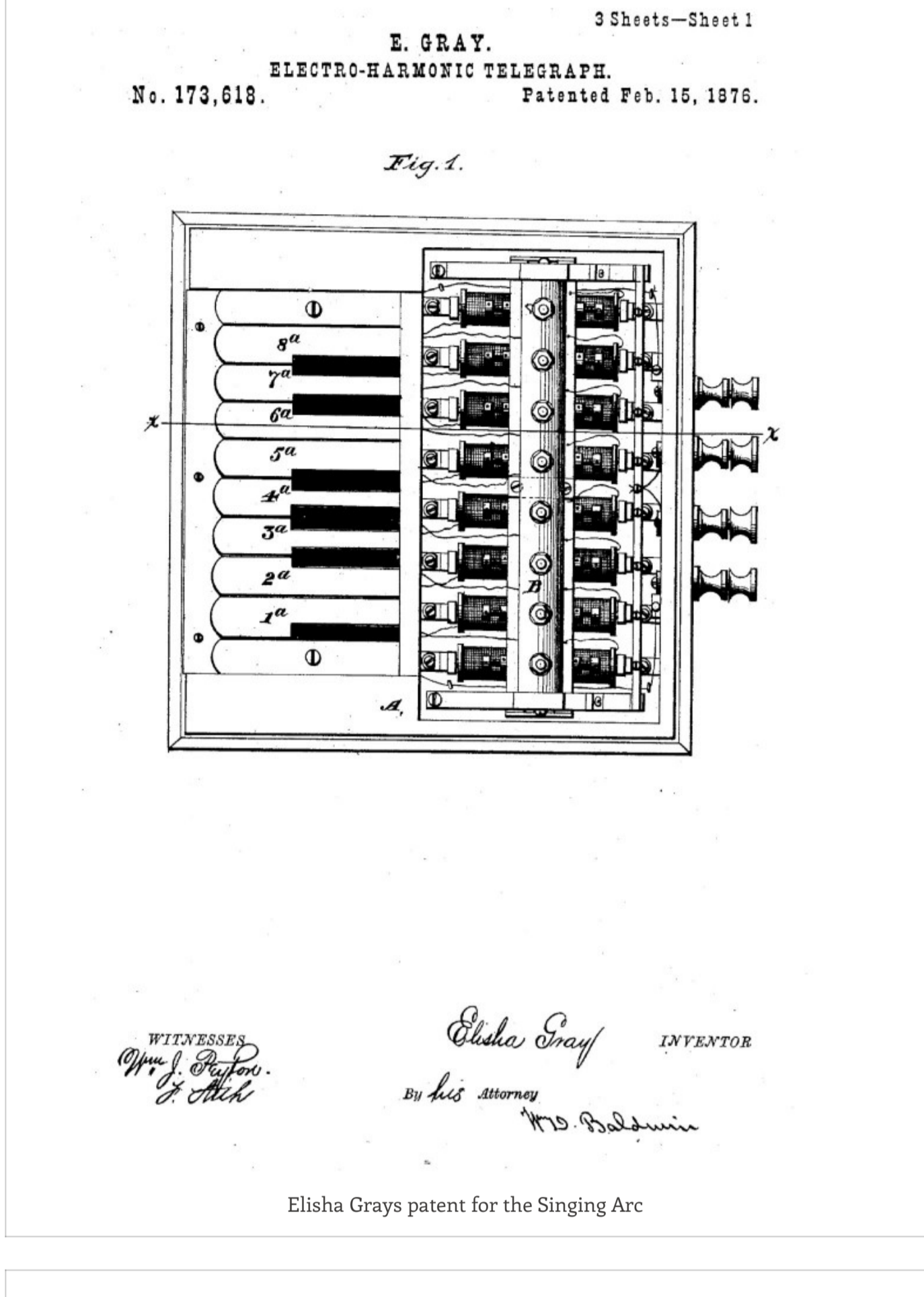
The 'Musical Telegraph' Elisha Gray. USA, 1876



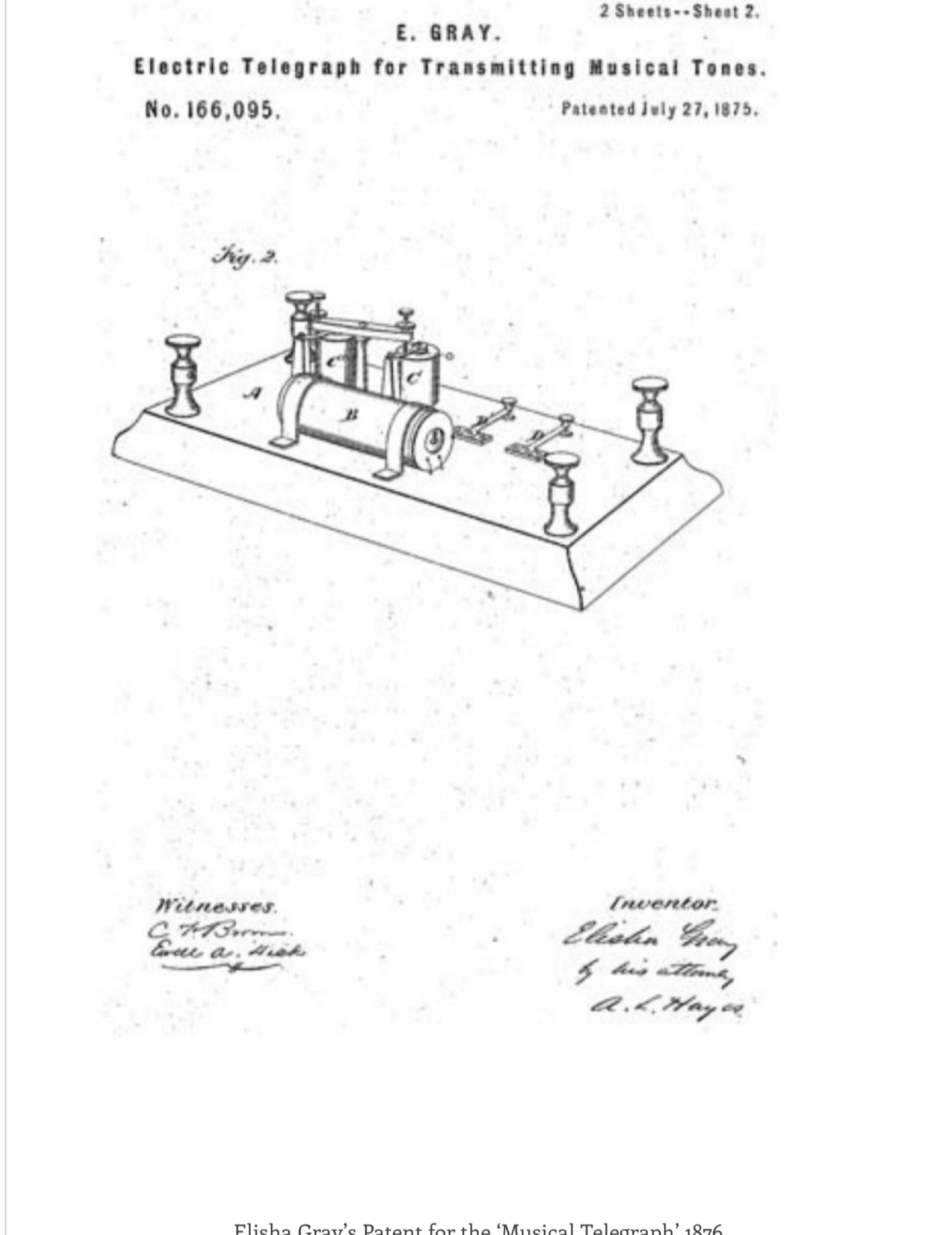
Prof. Elisha Gray

Elisha Gray using a violin as a resonating amplifier for his Musical Telegraph

Elisha Gray (born in Barnesville, Ohio, on Aug. 2, 1835, died Newtonville, Mass., on Jan. 21, 1901) would have been known to us as the inventor of the telephone if Alexander Graham Bell hadn't got to the patent office one hour before him. Instead, he goes down in history as the accidental creator of one of the first electronic musical instruments – a chance by-product of his telephone technology.

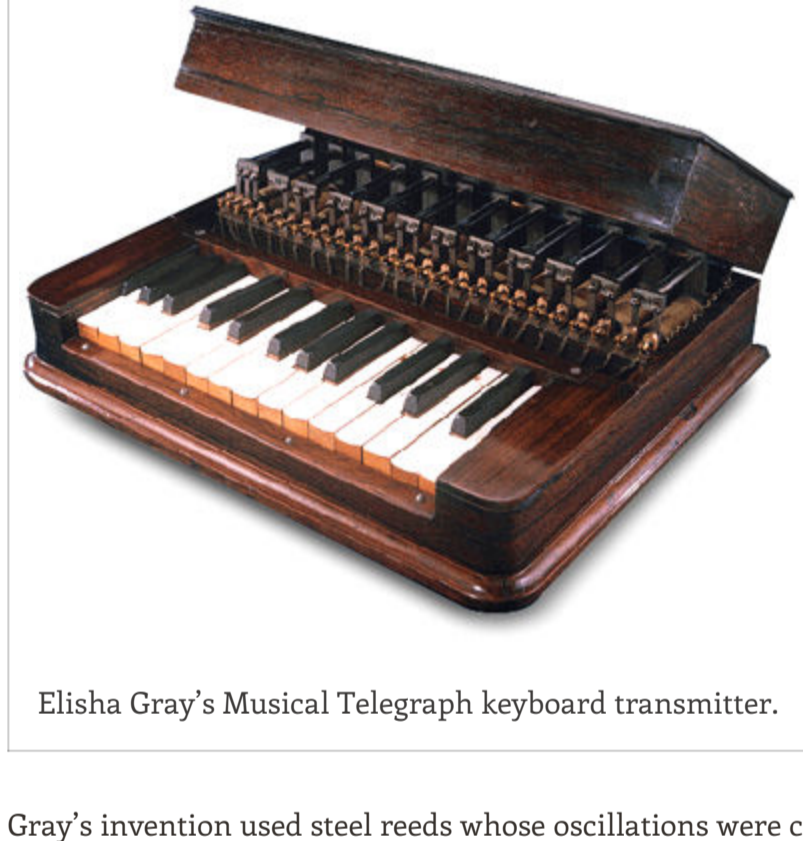


Elisha Grays patent for the Singing Arc



Elisha Gray's Patent for the 'Musical Telegraph' 1876

Gray accidentally discovered that he could control sound from a self vibrating electromagnetic circuit and in doing so invented a basic single note oscillator. Using this principle he designed a musical instrument; The 'Musical Telegraph'.



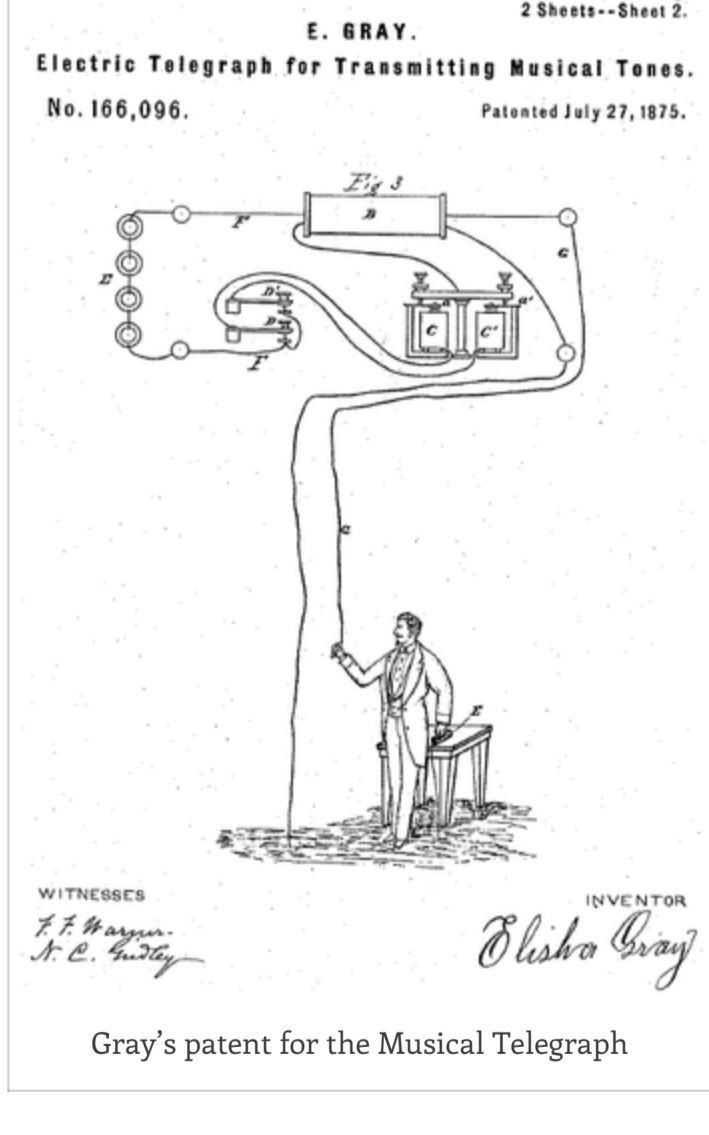
Elisha Gray's Musical Telegraph keyboard transmitter.

Gray's invention used steel reeds whose oscillations were created and transmitted , over a telephone line, by electromagnets. Gray also built a simple loudspeaker device in later models consisting of a vibrating diaphragm in a magnetic field to make the oscillator audible. After many years of litigation, A.G. Bell was legally named the inventor of the telephone and in 1872, Gray founded the Western Electric Manufacturing Company, parent firm of the present Western Electric Company. Two years later he retired to continue independent research and invention and to teach at Oberlin College.

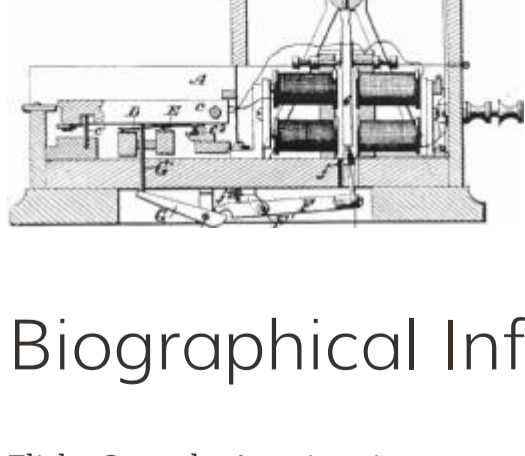


Elisha Gray gave the first public demonstration of his invention for transmitting musical tones at the Presbyterian Church in Highland Park, Illinois on December 29, 1874 and transmitted "familiar melodies through telegraph wire" according to a newspaper announcement- possibly using a piano as a resonating amplifier.

Elisha Gray's first "musical telegraph" or "harmonic telegraph" contained enough single-tone oscillators to play two octaves and later models were equipped with a simple tone wheel control. Gray took the instrument on tour for him in 1874. Alexander Graham Bell also designed an experimental ' Electric Harp' for speech transmission over a telephone line using similar technology to Gray's.



Gray's patent for the Musical Telegraph



Biographical Information:

Elisha Gray, the American inventor, who contested the invention of the telephone with Alexander Graham Bell. He was born in Barnesville, Ohio, on Aug. 2, 1835, and was brought up on a farm. He had to leave school early because of the death of his father, but later completed preparatory school and two years at Oberlin College while supporting himself as a carpenter. At college he became fascinated by electricity, and in 1867 he received a patent for an improved telegraph relay. During the rest of his life he was granted patents on about 70 other inventions, including the Telautograph (1888), an electrical device for reproducing writing at a distance. On Feb. 14, 1876, Gray filed with the U.S. Patent Office a caveat (an announcement of an invention he expected soon to patent) describing apparatus 'for transmitting vocal sounds telegraphically.' Unknown to Gray, Bell had only two hours earlier applied for an actual patent on an apparatus to accomplish the same end. It was later discovered, however, that the apparatus described in Bell's caveat would have worked, while that in Bell's patent would not have. After years of litigation, Bell was legally named the inventor of the telephone, although to many the question of who should be credited with the invention remained debatable. In 1872, Gray founded the Western Electric Manufacturing Company, parent firm of the present Western Electric Company. Two years later he retired to continue independent research and invention and to teach at Oberlin College. He died in Newtonville, Mass., on Jan. 21, 1901."

Sources:

(Kenneth M. Swezey [author of "Science Shows You How"] The Encyclopedia Americana – International Edition Vol. 13. Danbury, Connecticut: Grolier Incorporated, 1995. 211)"

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