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To the Vice President:

The following is additional information with respect to my nomination of Thomas E. Murray into the National Inventors Hall of Fame. I am his great-grandson, also an inventor with a dozen patents pending, and am making this application on behalf of his family and friends.

Murray was a contemporary of Thomas Edison, and has 462 US patents to his credit. These patents may be viewed at Murray's website at <http://temurray.com>, with additional information on his Wikipedia page. They cover an enormous breadth of subject matter – from the early electrical system to household appliances, automotive related inventions, new types of welding, and so forth.

The major problem here is that Murray was humble. A devout Catholic, he believed pride was a great sin, and refused to allow himself to be called “a great inventor”. Combined with his partnership with Anthony N. Brady, who was one of the richest men in the world at the time, meant that, unlike Edison, he didn't have to make a lot of noise in order to find investors to fund his inventions. Also, unlike Edison, Murray credited the people he worked with as inventors on his patents. Employees of his companies kept their names on their patents, although the employees assigned the patents to Murray's companies. Thus his patent count reflects the work of one man - not inflated by the work of others - which makes it all the more remarkable.

At the time of his death, he left an estate valued at \$10 million, while Edison's estate was about \$12 million. So in terms of the commercial success, Murray did very well.

However, after 100 years, Murray has been largely forgotten. Even B. Zorina Khan, in her book, “The Democratization of Invention”, got it wrong. She had Murray listed as 7<sup>th</sup> of the Top 20 Great Inventors, however she had only found 270 of his patents. Using the correct number of patents would rank him as #4. I have discussed this with Ms. Khan and provided her with correct data.

Khan has other interesting statistics – most relevant is a ranking of how often an inventor's patents were cited by others – here Murray ranks third <http://www.temurray.com/top20inventors.pdf>. This indicated that Murray had a great influence on other inventors, and inventions.

Amongst his greatest contributions were to the early electrical generation and transmission systems in New York. A common description of Murray's work was that he ‘invented everything from the power plant to the light socket’, and in reviewing his inventions, there are 81 patents for boilers, radiators and the like; 139 electrical patents covering meters, cut-out boxes, fuses, switches, sockets, and dimmers.

These inventions helped make the early electrical system safer, especially his fuses (patent 1079948) to the point where Christmas tree lights could be placed on trees (patent 986,743), used to light Broadway (patent 678,677), or even to bathe in it (patent 1,048,858) – which seems silly until you think of today's tanning beds.

According to Engineering Historian Joseph Cunningham:

In regard to utility development (as opposed to pure inventions) I believe his greatest accomplishment was two fold – first, bringing order out of the utter chaos of more than 20 electric companies in New York City just prior to 1900.

By selecting the three (United Electric Light & Power Co., N Y Edison, Edison Electric Illuminating of Brooklyn) with the customer base to amortize the heavy investment in large scale power stations, he was able to reduce the cost of power by more than 65% and produce growth which surpassed his best estimates by more than 100%.

Murray also designed, built and ran the major power stations which powered New York City for the first half of the 20<sup>th</sup> century, including Waterside I and II; he also authored several books on the subject of power plant design.

He was also ostensibly one of the earliest environmentalists, with 11 patents for anti-pollution devices, for example the ‘scrubber’ which removed particles from smokestacks (patent 1,064,984)

He was also interested in the consumer side of electricity, inventing an apartment refrigerator (patent 1,120,220), an air conditioner (patent 1,741,726), and a dish washer (1,172,300) – a design still seen in bars today.

He also found new applications for very high current: electric welding. A considerable number of his patents involved remaking items which used to be forged or otherwise assembled, and instead molding them, then stamping them out of sheet metal and welding the two halves together. Patent number 1,682,403 is a typical example of this – a barrel made of sheet metal. Of note is Murray’s explanation of this: “My invention aims to provide an improved steel barrel or other hollow sheet metal article, which can be cheaply made and has peculiar features of advantage as hereinafter described.”

Finally, the most basic and simple of his inventions – a method for flanging the end of a metal tube (patent 1,212,804) embodies his genius. His inventions are generally extremely simple, useful, and cheaper to manufacture; however he was also visionary – witness his car storage system (patent 1,887,245), which only recently has been implemented in New York City... some 80 years later.

Murray was an “inventor’s inventor”. A lifetime dedicated to finding solutions to the problems he was fortunate enough to see needing to be solved.

I respectfully request that Thomas E. Murray be inducted into the Inventor’s Hall of Fame.

Should you have any questions, I would be happy to discuss them with you.

Thank you for your time,

