

ABOUT Samuel MORSE versus Alfred VAIL

In a few of my articles I wrote about the collaboration between Samuel Morse and Alfred Vail. And I sometimes alluded to the fact that it wasn't always clear who could take credit for the code and the equipment.

The battle regarding Samuel Morse's and Alfred Vail's share was fought by their families and descendants for decades, even long after Morse's death in 1872. As an example, you will find here three excerpts from the dispute that was fought through articles in 'The New York Times' in June 1904. Involved here are Stephen Vail, the son of Alfred Vail, and Edward Lind Morse, the son of Samuel Morse.

The start of it was an article in 'The New York Times' on May 26: the publication of a letter by Mr. Wallace Wood: "Did Morse Invent the Telegraph".

➤ With many thanks to **Kees van der Spek** and **Bill Burns** who provided me the articles!

1. But first a bit about Alfred Vail (1807-1859).



Alfred Vail played a very important role in the development of the Morse telegraph. Since he is unknown to many, I take this opportunity to put him here somewhat in the spotlight.

He was born in Morristown, New Jersey, where his father, **Stephen Vail**, was an entrepreneur and industrialist who built the Speedwell Ironworks into one of the most innovative iron works of its time. His brother George was a noted politician.

After completing his early schooling, he worked for his father and became a skilled mechanic. But he returned to school and enrolled in the University of the City of New York to study theology in 1832, graduating in 1836.

Visiting his alma mater on September 2, 1837, he happened to witness one of Samuel F. B. Morse's early telegraph experiments in the mineralogical cabinet and lecture room of **Professor Leonard D. Gale**. (This professor became later on heavily involved in the development of Morse's telegraph). He became fascinated by the technology and negotiated an arrangement with Morse to develop the technology at Speedwell Ironworks. That was a great stroke of fortune for Morse. Indeed, Vail brought with him his mechanical expertise, a practical inventiveness, and his father's financial resources. Negotiations resulted in an agreement between Samuel Morse and Alfred Vail, on September 23, 1837. Vail agreed to construct a full set of telegraph equipment at his father's shop and finance the American and foreign patent-application process, in return for a 25% interest in Morse's rights to the telegraph. Alfred split his share with his brother George, and when Morse took on **Francis O. J. Smith**, a congressman from Maine (then chairman of the House Committee of Commerce), as a partner, he reduced the Vails' share to one-eighth. Morse himself retained patent rights to everything Vail developed.

During 1838, Vail helped make many improvements to Morse's original design, including a simple sending key and a much more compact size. He also worked out the final form of the Morse code, and invented a printing telegraph in 1837. By 1838 the partners were demonstrating their perfected telegraph; the superb mechanics of the system were largely Vail's contribution. I would like to add here that Alfred Vail was assisted by a young skilful mechanic, William Baxter (the later inventor of the 'portable Baxter steam engine').

The first successful completion of a transmission with this system was at the Speedwell Iron Works on January 6, 1838, across two miles (3 km) of wiring. The message read "A patient waiter is no loser." Over the next few months Morse and Vail demonstrated the telegraph to Philadelphia's Franklin Institute, members of Congress, and President Martin Van Buren and his cabinet. Demonstrations such as these were crucial to Morse's obtaining a Congressional appropriation of \$30,000 to build his first line in 1844 from Washington to Baltimore. Vail remained with Morse for the next four years, publishing 'The American Electro Magnetic Telegraph in 1845'. He retired to Morristown in 1848, intending to manufacture telegraphic equipment, but his

plans were never realized. Since Vail shared a one-eighth interest in Morse's telegraph patents with his brother George, Vail realized far less financial gain from his work on the telegraph than Morse and others. He died in poverty in January 18, 1859.

Because the terms of Vail's partnership agreement specified that all patents would be in Morse's name, it is difficult to tell precisely which telegraphic innovations were Vail's invention, and to what extent.

2. The article of Wallace Wood

Published: May 26, 1904

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> By Wallace WOOD:

Quote

DID MORSE INVENT THE TELEGRAPH,

Did Morse himself claim to be the inventor of the telegraph? When introduced at the Austrian Court the Emperor asked "Are you the man that invented the telegraph?" Morse touched himself on the breast and replied: "I am the telegraph".

The stages in the formation of a live machine are many; suggestion, hypotheosis, conception, theory, invention, composition, expression, exhibition, operation, practice, exploitation, and success. The road is as long as the "Pilgrim's Progress", and as full of terror.

Honors are divided. According to Knight, Elias Howe made the first sewing machine, and Singer made the first machine that would sew. A Greek made the first steam machine, Watt made the first steam machine that would go. Fourier invented the railroad, Stephenson married the wheels to the rails and founded the railway system.

Why do we commemorate the day? Artist, inventor, and discover, man of science, professor, founder, and philanthropist, that Morse was of heroic mold, and stands high in the ranks of the "great and good", no one will deny. Nor will humanity be likely to forget the American who, through years of anguish, reduced to the dire extremity of less than the price of a single meal, at last was crowned, for "with a thread he has bound all the nations of the earth and sealed the union with fire from heaven."

WALLACE WOOD

New York, May 24, 1904

Unquote

➤ 3. The first reaction of Stephen Vail

Published: June 7, 1904

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> By Stephen Vail: "An argument to show that it was his son Alfred, and not Morse who is the father of the telegraph".

See further down below

An Argument to Show that It Was His Child, Not Morse's.

To the Editor of The New York Times:

In THE TIMES of May 28 last appears a communication, signed Wallace Wood, and entitled, "Did Morse Invent the Telegraph?"

I will reply to that query by the emphatic statement that Morse did NOT invent the telegraph, as it has been known to the world, although it bears his name, which illusion he took no means whatever to dispel. Morse did invent, or rather made a combination of the ideas of others, (as he was compelled to swear under oath in the courts,) and this produced his crude and impractical early apparatus, which required for its operation a cumbersome vocabulary, in which each word in the language had its synonym, in the V-shaped points, and which his system was only capable of producing.

Morse's original apparatus in September, 1837, passed into the hands of my father, Alfred Vail, "for an entire mechanical reconstruction throughout, to speak a language not only wholly unknown to the first machine, but to perform entirely new functions, and to produce an entirely new system of signs and letters, which the first, by its structure, was physically incapable of being made to speak. Alfred Vail produced, in the new instrument, the first available Morse machine. He invented the first combination of the horizontal lever motion to actuate a pen, a pencil, or style, and the entirely new alphabet of dots, spaces, and dashes, which it necessitated, and he did so subsequent to September, 1837, the month in which the old instrument passed into his hands for reconstruction. * * * The new machine was Vail's—not Morse's, and that apparatus is identical with the one in universal use to this day." The foregoing is a quotation from a biographical sketch of Alfred Vail, written by F. B. Rowland, of Cincinnati, and published in 1879.

is a quotation from a biographical sketch of Alfred Vail, written by F. B. Read of Cincinnati, and published in 1873.

From the contract entered into between my father and S. F. B. Morse, dated Sept. 23, 1837, I quote the following:

"The party of the second part, (Alfred Vail,) covenants to construct, and put into successful operation, at his own proper cost and expense, one of the telegraphs of the plan and invention of the party of the first part, (S. F. B. Morse,) and to exhibit its full power and value before a committee of the Congress of the United States.

"All expenses, which in the judgment of both parties shall necessarily be incident to the final completion and perfection of the said plan of telegraphic communication, shall be defrayed by the said Vail of the second part, who also agrees to devote his time and personal services faithfully to this object without charge."

Another clause of this contract provides: "And it is hereby further agreed between the parties of the first and second parts that in case either of them shall make any new discoveries, which shall be applicable to the said telegraph, or any invention which will tend toward perfecting the same, in any manner, he will, as soon as practicable, communicate the same to the other, and it shall be held as the property of each, in the same proportion as their respective rights in the whole. * * *"

"* * * It is also agreed by the said Morse, of the first part, that, provided the said Vail, of the second part, will procure to be taken out, letters patent, for this invention, in any or all of the foreign countries of the globe, he shall be entitled to an equal and undivided one-half of all such benefits, profits, and advantages arising therefrom. * * *"

With reference to Morse's fulfillment of this latter clause of the contract, it may not be out of place for me to state that, for some reason, (I know not what,) it was found that patents could not be obtained in the countries of Europe, but a number of years later, (after my father's death in 1859,) a present of 400,000 francs was made by some of the Continental Governments to Morse, in lieu of his failure to obtain patents, and notwithstanding the terms

by some of the Continental Governments to Morse, in lieu of his failure to obtain patents, and notwithstanding the terms of the contract above, the trustees of the estate of Alfred Vall were compelled to sue in the courts for that which they considered was the share of Alfred Vall in this gift, because of Morse's refusal to fulfill his agreement, and the suit was decided in favor of the trustees. Comment upon Morse's course is unnecessary.

In the *Century Magazine*, issue for April, 1888, is an article entitled "The American Inventors of the Telegraph, with Special References to the Services of Alfred Vall," written by Prof. Franklin Leonard Pope, at that time, and until his death in 1896, the leading electrical expert in the United States, and only published by the Century Company after three years of preparation, and verification of each statement claimed for Alfred Vall.

In concluding the article, of over twenty pages in length, Prof. Pope wrote: "The elementary mechanism, illustrated on the previous page, and the alphabetical code of Vall, based on the immutable principle of the division of time and space, are essentials—all else is, in a greater or less degree, superfluous.

If we examine more closely this elementary apparatus we find it almost identical with that employed by Joseph Henry in 1832. The battery, the circuit of wires, the electro-magnet, the lever, and the device which produces sounds, when struck by the lever, under the attractive impulse of the electro-magnet, differ, in no material respect, from the devices of Henry.

His crude transmitting apparatus, a wire dipped in mercury, is replaced by Vall's finger key. The adjustable stops between which the armature lever vibrates, originally devised by Page, were also incorporated into the telegraph by Vall. It is self-evident, therefore, that not a single feature of the original invention of Morse, as formulated in his caveat, and repeated in his original patent, is to be found among the essential constituents of the modern apparatus.

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Prior to 1837 it embodied the work of Morse and Henry alone. From 1837 to 1844 it was a combination of the inventions of Morse, Henry, and Vail; but, as we have seen, the elements constructed by Morse have gradually fallen into desuetude, so that the essential telegraph of to-day, and the universal telegraph of the future, comprises solely the work of Joseph Henry and Alfred Vail.

It has been queried why, if Alfred Vail invented the alphabet, and the mechanism necessary to utilize it, did he not claim them? Under his contract with Morse he could not have done so, for he was debarred by it from taking out patents in his own name, even for the independent creations of his own brain. His position as Morse's partner forbade him to set up a claim, which might have been used with telling effect, against the validity of Morse's patent.

STEPHEN VAIL.

Washington, June 1, 1904.

➤ 4. The reaction of Edward Lind Morse

Published: June 21, 1904

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> "MORSE's son, Edward Lind MORSE, defends his father's claim to paternity of the telegraph"

See further down below

To the Editor of The New York Times:

My attention has been called to a communication in *THE TIMES* of June 7 headed "Vail, Father of the Telegraph," and signed Stephen Vail. While I have no desire to enter into a newspaper controversy with Mr. Vail, and while I am sure that you have no desire to encourage one, I trust in justice to my father, Samuel F. B. Morse, you will allow me a few words in reply.

My father's fame is too firmly established to be injured by such a series of falsifications and distorted facts, but some there may be who might think he had no champion were these statements allowed to go unchallenged.

It would take too long to answer all of Mr. Stephen Vail's accusations in an article of this character, for the subject is a complex one. I can, however, refer any one interested in the matter to a series of articles in *The Electrical World* on the invention of the telegraph, which appeared in 1895 and 1896. In this series every one of the claims put forth by Mr. Vail in this article and in many others which have appeared from time to time from his pen have been met and answered by me and by others.

The summing up of the editors at the end of this series was that, even if the minimum of credit were allowed to Morse, his was undoubtedly the greatest figure in the history of the telegraph, and that he had well earned the title of "Inventor of the Telegraph." The only specific accusation to which I wish to refer is that concerning the award of 400,000 francs to my father by certain foreign Governments.

My papers are all in my city house, so I must trust to my memory.

The notification to my father of the award is in French, and states that it was made to him as a personal one (*toute personnelle*) for his great services to science and the world. F. O. J. Smith, one of the original partners in the telegraph, sued for part of it, and won his suit on a legal technicality. The lawyers on both sides considered the decision unjust. I have documents to prove this.

I have no record of the Vails having sued, and considering the wording of the contract quoted by Mr. Stephen Vail, I do not quite see what right they had to sue. This contract says specifically that Alfred Vail should receive one-half of all profits, &c., if he succeeded in securing patents in foreign countries. This he did not do, nor did he have any hand in securing the above-mentioned award.

It might with equal justice have been claimed that the medals and decorations bestowed on my father by foreign Governments should have been divided with the other partners.

The other accusations are of such a technical character that it would require too much space to answer them, but they are all either false or distorted.

Mr. Stephen Vail in his efforts to claim the invention of the telegraph for his father does not hesitate to accuse my father of the lowest meanness and double dealing and the basest ingratitude.

Calumny is a poor weapon, and I shall not stop to answer all the base attacks on one so renowned for his probity and high-mindedness as Morse.

I do not wish anything I may have said to be construed as reflecting on the memory of Alfred Vail. His services in the early history of the telegraph were of the greatest value, and he was an honorable gentleman. He never claimed for himself what has been claimed for him, not because of his contract, for in his book on the telegraph and in some of his writings he claims the invention of certain parts of the mechanism of the earlier instruments (now obsolete.) He did not do so because he knew that he had no right to claim the invention of the dot-and-dash alphabet and the other essentials which have been claimed for him.

I could write much more, but I will spare your readers, and again refer those interested to the articles in *The Electrical World*, where the subject has been thrashed out from every point of view.

EDWARD LIND MORSE.

Chocorua, N. H., June 13, 1904.

➤ 5. The second reaction of Stephen Vail

Published: June 30, 1904

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> "Stephen VAIL on his father's claim to telegraph invention"

To the Editor of The New York Times:

The space accorded me by the courtesy of THE TIMES, in which to respond to the letter of Mr. Edward Lind Morse, in its issue of the 21st inst., is so inadequate to the proper reply to his statements that I am unable to make any allusions to them in detail, and as well, to his charges against myself, for my efforts to place the real status of S. F. B. Morse before the world.

Mr. Morse's knowledge of the invention of the telegraph has been acquired entirely by hearsay, and mainly, if not altogether, from his father, whose vanity enabled him to forget all sense of gratitude, honor, and justice to Alfred Vail, his friend, benefactor, co-inventor, and the maker of the fame and renown with which the name of S. F. B. Morse was, and is, so wrongly credited. Morse allowed no opportunity to escape in which he might obliterate all record of Alfred Vail's connection with the invention.

Mr. E. L. Morse's very positive statement that "Alfred Vail never claimed for himself that which has been claimed for him," is without foundation, and Mr. Morse's assertion would indicate that he must have been a prodigiously precocious prodigy, for at the time of my father's death, in January, 1859, this more or less veracious chronicler of Alfred Vail's mental operations was but an infant in arms.

A diligent search through the letter of Mr. E. L. Morse fails to disclose any evidence in support of his very general denial of anything claimed for Alfred Vail as being the real inventor of the telegraph. The editors of The *Electrical World* were self-constituted judges, and their opinion is worth as much as any one else's, perhaps, but no more. Mr. Morse very conveniently forgets that not all the writers in that series were of his mind.

Alfred Vail lived up to the spirit, no less than to the letter, of his contract with Morse, as he believed that he, as an honorable man, should, and to this fact is due the other fact that to Morse (who never evinced the slightest hesitancy in accepting it) has been accorded the fame and renown of an invention of which, instead of being the inventor, he was but the instigator and promoter.

Alfred Vail believed that this contract with Morse so fully covered everything that he might accomplish in the development and improvement of the telegraph that (notwithstanding that he was compelled to cast aside as absolutely impracticable Morse's crude, original apparatus, with its cumbersome vocabulary, and, alone and unaided by Morse, invented the new "recording receiver," "the sounding key," and the "dot-and-dash" alphabet, which they necessitated) he considered that he was but doing his duty in strict accordance with his understanding of the terms of his contract, and that to Morse belonged all that he had accomplished.

I have an abundance of evidence that Morse's treatment of my father with reference to the invention, before his death, and of his memory since that event, was characterized by ingratitude and duplicity, which stopped at nothing that could stifle all evidence that Alfred Vail had aught to do with the invention beyond that of furnishing some money to S. F. B. Morse.

A strong sense of the injustice done to my father's fame (not only by Morse, but by many writers upon the subject of the invention, who have never investigated the subject but simply repeated that which others have wrongly written) has produced within me a profound desire to properly place before the world the most important part taken by him in that invention, and while I shall probably be characterized as bitter and unkind in some of my allusions, the truth needs no apologist, at least in this instance, for he who assumes to be that which he is not, has only himself to blame if his disguise is eventually torn from him and his real character be exposed.

Amos Kendall, the friend and counsel of both my father and Morse, at a meeting of the Board of Directors of the telegraph company, called to take action at the time of my father's death, said: "If justice be done, the name of Alfred Vail will ever stand associated with that of S. F. B. Morse in the history and introduction to public use of the electro-magnetic telegraph."

Notwithstanding Mr. E. L. Morse's assertions to the contrary, I have in my possession the following written and signed statement made by my father:

"Oct. 23, 1846.

"This lever and roller were invented by me in the sixth story of The New York Observer office in 1844, before we put up the telegraph line between Washington and

Baltimore, and the same has always been used on Morse's instruments.

"I am the sole and only inventor of this mode of telegraph embossed writing. Prof. Morse gave me no clue to it, nor did any one else, and I have not asserted publicly my right as first and sole inventor because I wished to preserve the peaceful unity of the invention, and because I could not, according to my contract with Prof. Morse, have obtained a patent for it."

STEPHEN VAIL.

New York, June 25, 1904.

THE END