

## NOTES

1. Edward N. Dickerson, *Joseph Henry and the Magnetic Telegraph. An Address Delivered at Princeton College, June 16, 1885* (New York: Charles Scribner's Sons, 1885), pp. 42-43. [Return to [text](#).]

2. Ibid, p. 52. [Return to [text](#).]

3. For discussions of patent rights in this period, see Robert Post, *Physics, Patents, and Politics: A Biography of Charles Grafton Page* (New York: Science History Publications, 1976); Carolyn Cooper, *Shaping Invention: Thomas Blanchard's Machinery and Patent Management in Nineteenth-Century America* (New York: Columbia University Press, 1991); and Daniel Preston, "The Administration and Reform of the U.S. Patent Office, 1790-1836," *Journal of the Early Republic* 5 (Fall 1985): 331-353. For Henry's views on some of these questions, see Arthur P. Mollela, "The Electric Motor, the Telegraph, and Joseph Henry's Theory of Technological Progress," *Proceedings of the IEEE* 64 (Sept. 1976): 1273-1278. [Return to [text](#).]

4. These suits were *Morse v. O'Reilly*, brought in Kentucky in 1849 against the Columbian Telegraph; *Smith v. Downing*, brought in Boston in 1850 against House's Printing Telegraph; and *French v. Rogers*, brought in Philadelphia in 1851 against Bain's Chemical Telegraph. The Morse interests were successful in *Morse v. O'Reilly* and *French v. Rogers*, but failed to obtain an injunction in *Smith v. Downing*; the judge in that case ruled that House's telegraph did not infringe Morse's patents. For the Supreme Court decision in 1854, including Chief Justice Taney's majority opinion and Justice Grier's dissenting opinion, see *Decision of the Supreme Court of the United States on the Patents of Professor Morse* (New York: Pudney & Russell, Printers, 1854). Taney's majority opinion sustained all of Morse's patents except the eighth and broadest claim in his 1840 patent (as reissued in 1848), while Grier's dissenting opinion held that all of Morse's claims, including the eighth, were valid. For the effect of Henry's testimony on the views of the Justices, see two letters from Amos Kendall to Morse, Feb. 1, 1853, and Feb. 5, 1853, Morse Papers, Library of Congress. [Return to [text](#).]

5. For a discussion of electrical science before the discovery of the battery, see J. L. Heilbron, *Electricity in the 17th and 18th Centuries: A Study of Early Modern Physics* (Berkeley: University of California Press, 1979). [Return to [text](#).]

6. As quoted in William B. Taylor, "Henry and the Telegraph," in *Annual Report of the Board of Regents of the Smithsonian Institution...for the Year 1878* (Washington: Government Printing Office, 1879), p. 279. [Return to [text](#).]

7. "Communication from Prof. Henry, Secretary of the Smithsonian Institution, Relative to a Publication by Prof. Morse," in *Annual Report of the Board of Regents of the Smithsonian Institution...for the Year 1857* (Washington: William A. Harris, Printer, 1858), p. 109. [Return to [text](#).]

8. Ibid, p. 102. [Return to [text](#).]

9. Joseph Henry, "On the Application of the Principle of the Galvanic Multiplier to Electro-Magnetic Apparatus, and Also to the Developement of Great Magnetic Power in Soft Iron,

with a Small Galvanic Element," *American Journal of Science and Arts* 19 (January 1831): 404. [Return to [text](#).]

10. Henry to Morse, Feb. 24, 1842, in *The Papers of Joseph Henry*, Vol. 5, Nathan Reingold, ed. (Washington: Smithsonian Institution Press, 1985), p. 151. [Return to [text](#).]

11. Alfred Vail, *The American Electro Magnetic Telegraph: With the Reports of Congress, and a Description of all Telegraphs Known Employing Electricity or Galvanism* (Philadelphia: Lea & Blanchard, 1845), p. 13. [Return to [text](#).]

12. Ibid, p. 134. [Return to [text](#).]

13. Henry to Wheatstone, Feb. 27, 1846, in *The Papers of Joseph Henry*, Vol. 6, Marc Rothenberg, ed. (Washington: Smithsonian Institution Press, 1992), p. 385. [Return to [text](#).]

14. Both these points appear in a letter to Henry which Morse dictated and Vail signed, July 17, 1846, in *The Papers of Joseph Henry*, Vol. 6, Marc Rothenberg, ed. (Washington: Smithsonian Institution Press, 1992), p. 450. [Return to [text](#).]

15. About a year before publication, Morse wrote to Vail that the book "ought to be a joint concern of yours and mine," and that it should outline "the abortive attempts of the first plans abroad" in order to bolster Morse's claims to priority of invention. Morse to Vail, June 3, 1844, Vail Telegraph Collection, Smithsonian Institution Archives. In other letters, Morse repeatedly asked Vail to withhold information on the receiving magnet until he could obtain American and European patents on it. See especially Morse to Vail, Oct. 8, 1845, Vail Telegraph Collection. In his book, Vail finessed his explanation of how the telegraph operated over long distances in order to avoid describing the receiving magnet and local circuit, which had been in use on the first Washington to Baltimore line. See especially p. 18. [Return to [text](#).]

16. These were the Barnes & Zook, or Columbian, telegraph; and Bain's chemical telegraph. [Return to [text](#).]

17. Morse brought suit in 1849 in the US District Court in Kentucky against the telegraph entrepreneur Henry O'Reilly, seeking to enjoin him from using the Columbian Telegraph, a system which tried to evade Morse's patents by slightly modifying his machinery. Judge Monroe granted the injunction, but O'Reilly appealed to the Supreme Court. The Supreme Court ruled against O'Reilly and sustained the injunction, but struck down Morse's broadest claim--the exclusive use of electromagnetism for the purposes of recording signs at a distance. [Return to [text](#).]

18. "Deposition of Joseph Henry, in the Case of Morse vs. O'Reilly," Sept. 1849, reprinted in *Annual Report of the Board of Regents of the Smithsonian Institution...for the Year 1857* (Washington: William A. Harris, Printer; 1858), p. 110. [Return to [text](#).]

19. Ibid, p. 113. [Return to [text](#).]

20. Henry to Cambridge Livingston, May 13, 1850, in *The Papers of Joseph Henry*, Vol. 8, Marc Rothenberg, ed. (Washington: Smithsonian Institution Press, 1998). [Return to [text](#).]

21. Morse's "Defence," in *Shaffner's Telegraph Companion*, Jan. 1855, p. 8. [Return to [text](#).]