Conclusion

My main objective in writing this article was to be able to compile all the known information and data on the Welch, Spring and Company from its conception in 1868 to its demise in 1884. I think that I have accomplished this goal, and in the process, have answered the majority of the questions so often asked of me about the Welch, Spring and Company and the *Patti* clock.[73]

I have purposely avoided any discussion or comments on wheel counts, pendulum lengths, and gear trains, not because they are unimportant or unrelated to the subject, but because I think that they fall into lengthy articles of their own which I am in the process of researching.

It is sad to look back in history and see that even though Solomon Spring and B. B. Lewis developed and produced many new clock designs and inventions, within sixteen years the parent company would become so unprofitable that it would have to be dissolved. Although these two men may have been perfectionists and mechanical genii, it is apparent that neither one had the knowledge of cost analysis or marketing. For here, they were producing clocks that had to cost at least four or five times more to produce than similar clocks by other manufacturers but were being sold for only a few dollars more than a standard walnut shelf clock. Besides being under priced, the musical names that were given to them were impossible to pronounce, and furthermore, the celebrities they were named after were known only by a few wealthy people in the metropolitan areas. This greatly hindered the company in trying to sell their clocks to the general public.

New questions may arise and perhaps a few were not answered, but hopefully this article has given you a keener perception and insight into the Welch, Spring and Company and also into the *Patti Family*.

"Circa"

Table A shows the dates of all the clocks manufactured by the Welch, Spring and Company and a few of the Patti style clocks that were produced by the E. N. Welch Manufacturing Company. The purpose of the chart is to show the approximate introduction date and also the maximum number of years the clock could have been made. The circa column shows the year 1893 as the final year of production for any of the clocks. This is the year the E. N. Welch Manufacturing Company was forced to stop all production due to its financial situation. When the plant was reopened six years later, the company had discontinued these models and had started producing a completely different line of clocks.

TABLE A

Name	Year Introduced	Welch, Spring and Co. Circa	E. N. Welch Circa	Maximum Years Produced
Calendars				
No. 1	1870	1870-1884	—	14
No. 2	1870	1870-1884	—	14
No. 3	1873	1873-1884	—	11
No. 4	1870	1870-1884	—	14
No. 5 (30 day)	1873	1873-1884	—	11
Italian	1870	1870-1884	—	14
Auber	1877	1877-1884	—	7
Wagner	1877	1877-1884	—	7
Gale Drop	1877	1877-1884	—	7

Regulators				
No. 1 (30 day)	1870	1870-1872	—	2
No. 1 (8 day)	1874	1874-1884	—	10
* No. 2	1870	1870-1884	1885-1893	23
* No. 3	1870	1870-1884	1885-1888	18
No. 4 (30 day)	1873	1873-1884	—	11
No. 5	1873	1873-1884	—	11
Round Drop	1873	1873-1878	—	5
* Verdi	1877	1877-1884	1885-1893	16
Kellogg	1879	1879-1884	—	5
No. 6 (Lucca)	1879	1879-1884	—	5
* No. 7 (Patti)	1882	1882-1884	1885-1893	11
Shelf Models				
* Peerless	1868	1868-1884	1885-1888	20
* Empress	1868	1868-1884	1885-1888	20
Italians	1868	1868-1884	—	16
* Parepa	1877	1877-1884	1885-1888	11
* Lucca	1878	1878-1884	1885-1888	10
* Titiens (30 day)	1877	1877-1884	—	7
Patti Models				
* Patti, V.P.	1879	1879-1884	1885-1893	14
* Patti, No. 2	1879	1879-1884	1885-1893	14
Cary, V.P.	1879	1879-1884	—	5
Gerster, V.P.	1879	1879-1884	—	5
* Nilsson	1883	1883-1884	1885-1893	10
* Scalchi	1884	1884	1885-1893	8
** Norma	1889	—	1889-1893	4
** Ernani	1889	—	1889-1893	4
** Khedive	1889	—	1889-1893	4
** Judic	1889	—	1889-1893	4
** Cabinet No. 3	1889	—	1889-1893	4
** Irons — No. 1-9	1889	—	1889-1893	4
** Marbles	1889	—	1889-1893	4

* Sold by Welch, Spring & Company and after 1884 by E. N. Welch Manufacturing Company.
**Only made by the E. N. Welch Manufacturing Company.

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1. Brooks Palmer, *The Book of American Clocks*, 9th ed. (New York: Macmillan Company, 1970), p. 304.

2. Chris H. Bailey, *Welch Clocks, Fall of 1880* (Bristol: American Clock and Watch Museum, Inc., 1975), p. 79.

3. Robert Reichel, *The E. N. Welch Story* (Seattle, 1974), pp. 7-9.

4. Chris H. Bailey, op. cit.; p. 79.

5. Corporation Records, E. N. Welch Manufacturing Company (Bristol), July 6, 1864.

6. Chris H. Bailey, op. cit.; p. 80.

7. Barney, "Solomon Spring," NAWCC BULLETIN, Whole No. 59, Vol. VI, No. 9, June, 1955, pp. 490-491.

8. Later we will discuss Solomon Spring's design patent for a clock case that contained all the outstanding features of the London model. Since the Atkins Clock Company never challenged the design patent, Solomon Spring must have been deeply involved with the design and development of the London Model.

9. Chris H. Bailey, op. cit.; p. 87.

10. U.S. Patent Office, Patent No. 3,211, Sept. 22, 1868.

11. B. B. Lewis' papers, Jan. 21, 1864.

12. Although the bases varied in design, Solomon Spring never found a satisfactory method of fastening them securely to the case. A large number of clock cases attributed to Carter, Lewis, and Burwell have lost their original bases. Because of this, many people today think that these clocks never had anything but a flat base, but they did at one time have a full base.

13. Brooks Palmer, op. cit.; p. 282.

14. J. E. Coleman, "Clockwise and Otherwise," *American Horologist and Jeweler*, March, 1974, p. 42.

15. Brooks Palmer, op. cit.; p. 233.

16. B. B. Lewis, *B. B. Lewis' Calendar Clock Catalog*, (Hartford: 1870), p. 3.

17. Kenneth D. Roberts, "Clockmaking in Bristol, Conn. 1871," NAWCC BULLETIN, Whole No. 160, Vol. XV, No. 6, October, 1972, pp. 695-705.

18. A. H. and D. M. Miller, *Survey of American Clocks: Calendar Clocks*, (Elgin: Antiquitat, 1972), p. 8.

19. Ibid., p. 25.

20. Chris H. Bailey, op. cit., p. 87.

21. Bob Reichel, op. cit., Chart No. 4 and footnotes. E. N. Welch always was able to persuade his partners to let his name come first (e.g., Welch, Gray and Company, 1850; Welch, Brown, and Pomeroy, 1841; Welch, Brown and Company, 1856).

22. Research of all known trade catalogs and price lists never disclosed a thirty-hour timepiece.

23. Solomon Spring applied for the patent right after forming the partnership with E. N. Welch. The delay in issuing the patent was caused by a conflict with the patent office over a similar design submitted by G. B. Owens of the Gilbert Clock Company.

24. A. H. and D. M. Miller, op. cit., pp. 59-61.

25. Careful research of calendar clocks made with the V mechanism has proven this out. Note that the word "manufactured" was used and not the word "used". Ken Roberts in his reprint of the E. Ingraham and Co. catalogue of 1880 clearly illustrates that the Ionic Calendar model used the B. B. Lewis' perpetual calendar mechanism. From this we can conclude that the E. Ingraham and Company had been successful in purchasing the mechanisms from the Welch, Spring and Company and had used them as early as 1877. Later in the article I will cover the V mechanisms that were supplied to the Ingraham and the Jerome and Company by B. B. Lewis in the years 1884 and 1885.

26. For lack of any other description to describe this style and since the top does look like a ladies bonnet, I felt *bonnet-top* would be appropriate.

27. D. H. Shaffer, "A Survey History of the American Spring Driven Clock — 1840-1860," NAWCC BULLETIN, Supplement No. 9, Winter, 1973, p. 26.

28. Asher and Adams, *Pictorial Album of American Industry*. (New York: Asher and Adams, 1876), reprint, 1972. Quote from Welch, Spring and Company's article, "Attention is also called to the E. N. Welch Thirty-Day Spring Movement. It is made in the most thorough manner, and is claimed to be the only accurate Spring Thirty-Day Movement ever made. These movements are warranted to be good time keepers."

29. This movement shown in Figure 39 was made after 1882 because of

having maintaining power. The same movement without maintaining power was made as early as 1872.

30. Dr. Joseph G. Baier, "The Role of Wisconsin Residents in the Early American Clock Industry", NAWCC BULLETIN, Whole No. 156, Vol. XV, No. 2, February, 1972, pp. 125-134.

31. Brooks Palmer, op. cit., p. 198

32. Ibid.

33. Asher and Adams, op. cit., p. 151.

34. William Woernley, "Ithaca Calendar Clocks", NAWCC BULLETIN, Whole No. 151, Vol. XIV, No. 9, April, 1971, pp. 1055-1058.

35. A. H. and D. M. Miller, op. cit., p. 32.

36. Albert E. Wier, *The Macmillan Encyclopedia of Music and Musicians*, (New York: Macmillan Company, 1938), p. 1374.

37. Ibid., p. 1084.

38. Ibid., p. 1863.

39. Ibid., p. 1929.

40. Ibid., p. 935.

41. Ibid., p. 79.

42. Ibid., p. 1962.

43. J. E. Coleman, "Vox Temporis", NAWCC BULLETIN, Whole No. 54, Vol. VI, No. 4, June, 1954, pp. 246-248.

44. A picture of the clock even appeared in Asher and Adams Picture Album of 1876.

45. J. E. Coleman, "Clockwise and Otherwise", *American Horologist and Jeweler*, May, 1948, pp. 97-101.

46. The first patent said "A Clock Case" while the second patent said "Clock Cases".

47. J. E. Coleman, "Clockwise and Otherwise", *American Horologist and Jeweler*, Feb., 1965, p. 37. The Patti has springs that are 5/16th inch wide by .013 inch thick by 72 inches long.

48. J. E. Coleman, "Clockwise and Otherwise", *American Horologist and Jeweler*, March, 1974, pp. 40-48.

49. J. E. Coleman, "Clockwise and Otherwise", *American Horologist and Jeweler*, May, 1948, pp. 97-101.

50. The Forestville factory, that manufactured the movement, burned in December, 1885 and all tooling and equipment were destroyed. When the new tooling was made they must have incorporated these changes.

51. Kurt Pahlen, *Great Singers*, translated by Oliver Coburn, (New York: Stein and Day, 1974), p. 11.

52. J. E. Coleman, "Clockwise and Otherwise", *American Horologist and Jeweler*, May, 1948, p. 11.

53. Kurt Pahlen, op. cit., p. 28.

54. To clear up a point — **all** *Baby Patti* movements were made and advertised as eight day. *Baby Pattis* that still have the original springs have a tendency to only run seven days or less due to spring tension that has been lost over the years. Those with new modern springs have been known to run longer than the eight days. People who claim that their *Baby Patti* runs 14 days have oversize springs.

55. 1889-1890 Catalog.

56. Same error that was made by printers on the picture of the Patti in the trade catalogs.

57. I have never seen an E. N. Welch label on these clocks and they were only shown in the 1880 catalog.

58. Albert E. Wier, op. cit., p. 296.

59. Ibid., p. 662.

60. Ibid., p. 1310.

61. Ibid., p. 1649.

62. Age makes the label look black but the color appears to have been originally a dark navy blue.

63. Corporation Records, E. N. Welch Manufacturing Company, July 24, 1884.

64. "Sale of the Welch, Spring and Company", *Bristol Land Record*, Vol. 32, p. 304 and p. 309.

65. Chris H. Bailey, op. cit., pp. 87-90.

66. Ibid., p. 66.

67. "Bristol Press" Dec. 3, 1885.

68. J. E. Coleman, "Clockwise and Otherwise", *American Horologist and Jeweler*, March, 1974, p. 42.

69. J. E. Coleman, "Clockwise and Otherwise", *American Horologist and Jeweler*, Feb., 1965, p. 36.

70. Albert E. Wier, op. cit., p. 1315.

71. Ibid., p. 537.

72. Ibid., p. 1373.

73. I purposely only discussed *Patti* clocks that were listed in the trade catalogs. There are always a few exceptions of *odd-ball* models that appear to be original. These clocks could have been made as experimental or prototype models but were rejected by management for production for one reason or another. Since these clocks were never thought to be good enough to be produced or cataloged, I don't feel they should be classified as true Patti clocks.

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PHOTO CREDITS

Figures 1, 2, 6, 7 and 10 — American Clock and Watch Museum
Figures 11, 12, 18 to 22, 56, 57, 60 to 62 and 116 — all inclusive: A. H. Miller
Figures 26, 27 and 121 — Henry Ford Museum and the Edison Institute
Figure 77 — Studio Book — Viking Press
Figure 94 — J. E. Coleman
Figure 118 — Private collection