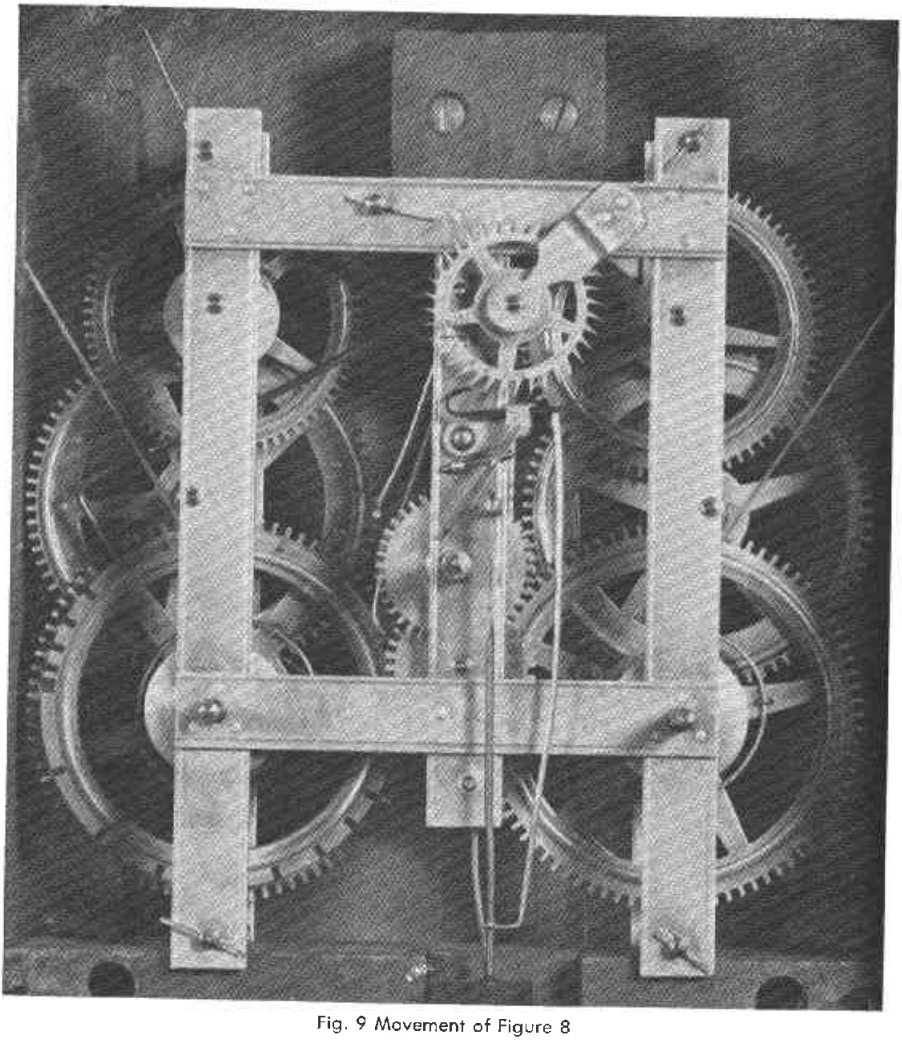

Fig. 9 Movement of Figure 8

The rosewood case is 7½" x 18½" x 47" and has many of the same turnings and moldings that Solomon Spring would use later on other regulators and shelf models. This regulator has a black pendulum rod, a 10 inch painted dial, black flocked paper on the backboard, and a wire gong. The brass strap movement in Figure 9 is 4" x 6½", has rolling pinions, and a recoil escapement. This model, like the previously mentioned shelf model, also came as a calendar clock with the B. B. Lewis perpetual calendar movement. By removing the lower finials and the lower portion of the base, the regulator can be made into a shelf model.

Although the S. C. Spring Clock Company did produce a limited number of clocks using its own name, it appears that its main income came from supplying cases, movements, and parts to other Bristol clock dealers, mainly Carter, Burwell, and Lewis. It was at this time that Elias Burwell had made an agreement with B. B. Lewis to be allowed to manufacture and sell the Lewis' perpetual calendar mechanism. In return for the manufacturing rights, Burwell paid Lewis one dollar for each calendar movement

made and sold.[11] The three main users of the Lewis' perpetual calendar mechanism were E. Burwell, L. F. & W. W. Carter, and B. B. Lewis. Since all three were jobbers and not manufacturers, Solomon Spring took full advantage of the situation by supplying them with rosewood cases and most of the movements. Although the basic designs of the cases were similar, Solomon Spring wisely varied either the construction of the bottom base,[12] the calendar door opening, or the wooden dial bezels giving a definite identity to each case supplied to a particular dealer.

On the clocks Solomon Spring manufactured and sold under his name, the labels either read, "S. C. Spring, Successor to Birge, Peck & Co.", "S. C. Spring, Bristol, Conn.", or "S. C. Spring Clock Co."

Not only was Solomon Spring a good organizer and administrator, he was also very loyal to members of his family. He had his three brothers, Charles, Edwin, and George, all working for him in one capacity or another at the S. C. Spring Clock Company and later at the Welch, Spring and Company.[13]

B. B. LEWIS

Benjamin B. Lewis, the inventor (Figure 10), was born October 30, 1818, in Athens, New York. At the age of nine, he was orphaned. After a short experience as a clerk in a New York City store, he went to sea and worked his way up to the position of a commander by the age of 22. In 1840, he moved to Huron, Ohio, where he was engaged in pharmaceuticals and also dealt with watches, clocks, and jewelry.[14]

While in Huron, Lewis came in contact with H. S. Skinner, who had obtained Patent No. 19549, in 1858, on a clock calendar mechanism. It is not known for sure whether Lewis worked on the design with Skinner or whether Lewis could see a method on how to improve Skinner's idea. It is more than coincidental however, that within two years, Lewis had sold his business in Huron, had moved to Bristol, and was working on a clock calendar mechanism with E. Burwell and W. W. Carter. On February 4, 1862, Patent

Fig. 10 B. B. Lewis (1818-1890)

No. 34341 was issued to him on a perpetual calendar mechanism in which the year, month, and date gears turned upon the same center behind a dial that indicated the month and date. Around 1862, Lewis sold to E. Burwell the rights to manufacture and sell the Lewis' Perpetual Calendar which Burwell labeled, "Lewis' Perpetual Calendar, Manufactured by E. Burwell, Bristol, CT" (Figure 11).

Lewis received a second patent on June 21, 1864, No. 43214, which indicated the day of the week on the time dial. On December 29, 1868, Lewis received his third calendar clock patent, No. 85456, which was an improvement and a foolproofing of his earlier mechanism. This patent clearly shows it to be what Miller describes as the Y mechanism in his book, *Survey of American Calendar Clocks*. Although Lewis did not receive the patent until December, 1868, E. Burwell, under authorization from Lewis, had been producing this Y mechanism for a perpetual calendar since 1864-1865. By 1868, B. B. Lewis held three perpetual calendar patents, dated February 4, 1862, June 21, 1864, and December 29, 1868. Earlier he had purchased W. W. Carter's calendar clock patent dated September 15, 1863.

Fig. 11 Calendar Label used by E. Burwell

In 1867, Burwell had gotten out of the clock business, and Lewis started to manufacture his own Y calendar mechanism, using the same tools that belonged to Burwell, under the label, "B. B. Lewis' Perpetual Calendar, Manufactured by the Inventor, Bristol, Conn." (Figure 12). Lewis sold his own clocks under the name of either "Benjamin B. Lewis"[15] or "Benjamin B. Lewis and Son".[16]

FORMATION OF THE WELCH, SPRING & CO.

By 1868, the E. N. Welch Manufacturing Company had become the leading clock manufacturer in the Bristol area.[17] Elisha Welch, being a good sound businessman, was well aware of the increasing popularity of a clock he did not manufacture, the perpetual calendar clock. In 1864, the Seth Thomas Clock Company of Thomaston, Connecticut, had purchased all rights for the Mix Brothers calendar patents[18] and were doing a land office business in calendar clocks. In 1865, the Ithaca Calendar Clock Company of Ithaca, New York, was formed and was producing calendar clocks using the Horton perpetual calendar clock mechanism.[19] The perpetual calendar clock had been a success overnight. Elisha Welch knew he had to keep his dealers and suppliers happy, and in order to do this, he had to add the perpetual calendar clock to his clock line. This created a problem for him. The E. N. Welch Manufacturing Company was not suited or equipped for constructing the much larger and fancier calendar clock cases nor did they have a perpetual calendar clock patent

which he could use. Being a shrewd businessman, Elisha Welch knew that in Bristol he had both. He felt confident that if he handled the situation with skill and tact he could get exactly what he needed.

The key was to acquire the S. C. Spring Clock Company which had the facilities to manufacture the cases plus a working agreement with B. B. Lewis for his perpetual calendar mechanism. To accomplish his goal, Elisha Welch had to make some arrangement with Solomon Spring. To do this, Elisha Welch had three choices: first, to buy him out; second, to make him a stockholder in the E. N. Welch Manufacturing Company; or third, to form a new company or firm. To purchase the S. C. Spring Clock Company for a fair and equitable price was not Elisha Welch's style of doing business. He was an opportunist and always took advantage of a bankruptcy or a company in financial distress. Since the S. C. Spring Clock Company did not appear to be in any financial difficulty, it only left him with his second or third option. The E. N. Welch Manufacturing Company was a solely owned family corporation; from this, it can be deduced that Elisha Welch

Fig. 12 Calendar Label used by B. B. Lewis

chose not to make Solomon Spring a stockholder in the parent company. During the month of March, in 1868, both parties agreed to form a partnership. The firm was formed and an agreement reached that it would be called the Welch, Spring and Company of Forestville, Connecticut. The new partnership was composed of E. N. Welch, S. C. Spring, J. H. Welch (Welch's son), G. H. Mitchell, and A. F. Atkins (Welch's two sons-in-law). They agreed that the purpose of the Welch, Spring and Company would be to supply a finer grade of clocks, regulators, and calendar clocks to the trade than the E. N. Welch Manufacturing Company had been able to do up to this time.[20]

The Bristol Land Records give the following facts on how the company was formed:

> *On March 31, 1868, E. N. Welch for a valuable sum of money in dollars, conveyed to the Welch, Spring and Company the factory he had bought on March 4, 1868, from his brother, Harmonous M. Welch and James E. English, both of New Haven. This factory had been known previously as the Manross Factory. The E. N. Welch Manufacturing Company reserved all the machinery and tools in the said factory used in the manufacture of clock springs. On April 23, 1868, Solomon C. Spring for $10,000.00 sells to the Welch, Spring and Company, consisting of Elisha N. Welch, Solomon C. Spring, James H. Welch, George H. Mitchell, and Andrew F. Atkins, all of Bristol, partners in business under the name and firm of Welch, Spring and Company, his property containing five acres more or less with dwelling house, factory buildings and shops, water privileges, together with the water wheels, main shafting and belting, and all the machinery and tools in said factories and shops used in the manufacture of clocks and clock cases including presses, lathes, dies and punches, saw frames, saws and mandrills, meaning all the machinery and tools belonging to the factories and shops.*

I will try to clear up the question, "Why did the partnership include J. H. Welch, G. H. Mitchell, and A. F. Atkins?" They were added to the firm for three reasons. The first was nepotism by E. N. Welch himself. Secondly, the Bristol Land Records indicate that E. N. Welch used the E. N. Welch Manufacturing Company's money when he purchased the Manross factory, and the men being stockholders in that firm automatically made them a part of the new company. And finally, they added operating capital to the firm.

When the Welch, Spring and Company went into operation, Elisha Welch had accomplished more than he had planned. Not only did he add calendar clocks to his line, but also added fine regulators and a higher grade of clocks. More importantly the new firm was named The Welch, Spring and Company of Forestville, and not The Spring, Welch and Company of Bristol.[21] Solomon Spring may have been under the impression that he was getting equal billing but most people still refer to the firm as *The Welch Company*. Elisha Welch knew exactly what he was doing and was very successful at it.

FIRST STAGE 1868-69

The final formation of the Welch, Spring and Company was in 1868. The next sixteen years that the company remained in business it progressed through four stages. The first stage was the era of the standard shelf models from 1868 to 1869; the second was the period for regulators and calendar clocks from 1870 to 1876; the third was the introduction of the fancy shelf and wall models from 1877 to 1878; and the fourth was the *Patti* era from 1879 to 1884.

It appears that the partnership agreement must have contained a clause delegating full management responsibility to Solomon Spring to develop and supervise the entire operation of the Welch, Spring and Company. No sooner had the new firm been established when Solomon Spring began to apply for and obtain all the

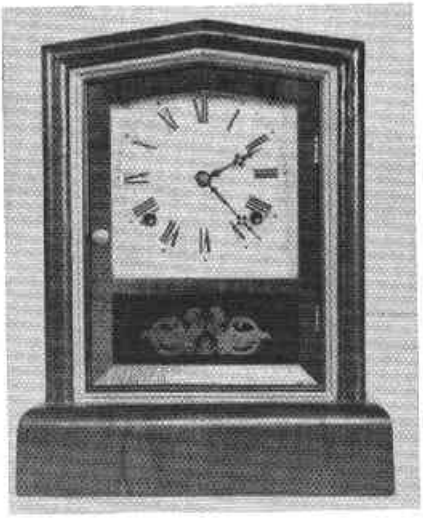

Fig. 13 Peerless Model

design patents on clock cases he had already been constructing. Among these were the basic case and molding design for the London model which he designed while employed by the Atkins Clock Company. For the first two years, from 1868 to 1869, he concentrated on producing three basic models: the Empress, the Peerless, and the Italian. All three came in rosewood cases, with 30-hour and eight-day time and strike spring movements. By constructing the Italian cases in different sizes and using gilt or rosewood columns on the Italian and Empress models, they were able to supply sixteen variations of the three styles. The list prices ranged from $4.25 for the Peerless, one-day time and strike, to $7.75 for the Italian No. 1, eight-day time and strike with gilt columns. During its entire history the Welch, Spring and Company never produced a one-day time only shelf clock or regulator.[22] All the one-day clocks sold under the Welch, Spring and Company label were time and strike with E. N. Welch movements.

On November 17, 1868, Solomon Spring received design Patent No. 3253 for the Empress model. The Empress is similar to the Peerless in all respects except the top is octagon shaped as opposed to the Peerless hexagon shaped top.

PEERLESS

Although the Peerless design was patented by Solomon Spring on June 8, 1869, Patent No. 3536, it was manufactured prior to that date.[23] The Peerless, seen in Figure 13, has a 10¾" x 13½" rosewood veneered case, a gold leaf border around the door opening, and a gold leaf lower tablet. This style Peerless, 13½ inches high with a tablet glass, was made from 1869 to 1876 and sold for $5.50 for the eight-day model and $4.25 for the one-day model. In 1877, when the Peerless design patent expired, the case was redesigned and became 17½ inches high and had a full glass door with a visible pendulum. The newly designed clock sold for $6.50 for the eight-day model and $5.75 for the one-day model. The production period lasted from 1869 to 1884.

The Peerless has a standard E. N. Welch brass eight-day movement that is 3½" x 5" with a recoil escapement (Figure 14).

ITALIANS

Three variations of the Italian model, circa 1868-1884, are shown in Figure 15. They are from left to right: the Italian No. 3, the Italian No. 2, and the Italian No. 1 Calendar.

The Italian No. 1 model came in an 11½" x 20¼" rosewood case, had a 7 inch dial, rosewood or gilt columns, and an eight-day time and strike movement. The Italian No. 2 model came in an 11" x 17½" rosewood case, had a 6 inch dial, rosewood or gilt columns, and an eight-day time and strike movement. The Italian No. 3 model came in a 9" x 13½" rosewood case, had a 4 inch dial, rosewood or gilt columns, and a one-day time and strike movement.

From 1868 until 1876, all Italian models came with an upper wooden bezel and a lower door which had a hexagon shaped top and a painted glass tablet. Starting in 1877, and until 1884, the Italians No. 2 and No. 3 eliminated the two door design, the painted tablet, and the two rosettes and used the plain glass, one piece door in its place.