

The 8th Wonder of The World

by Thomas J. Bartels (PA)

While poring over some old museum files of potential acquisitions about a year ago, I ran across some correspondence and pictures regarding a clock that immediately made the adrenaline flow and the heart start pounding. Here was a clock that was advertised in the 1870's as the "8th Wonder of the World," stood over 11 feet tall, was 9 feet long, and was touted to rival any clock in the world. It was constructed over a 20-year period by a man named Stephen Decatur Engle in Hazleton, Pennsylvania, and had been exhibited up and down the east coast for almost a hundred years.

Reading further, I discovered that the clock had disappeared in the early 1950's, and had been vigorously sought after until it was found residing in a barn in upper New York state in 1983. NAWCC founding president Robert Franks wrote an article describing the piece and asking information regarding the whereabouts of the Engle clock in the February 1952 BULLETIN. A letter, written by a relative of Stephen Engle requesting information on the clock, appeared in the October 1977 BULLETIN. Also in the file were various newspaper articles wondering what had become of the Engle clock.

Upon its rediscovery in 1983, the Engle clock was purchased by an entrepreneur, moved to another barn in Connecticut, and offered for sale. The Smithsonian and the NAWCC Museum expressed a desire to purchase or exhibit the Engle clock, but were unable to come to terms with the new owner. Since the clock was in a state that could only be described as de-

crepitude, and due to its immense size, the potential market definitely seemed limited, and so the Engle clock remained in storage for another five years awaiting its resurrection.

A quick call to the owner confirmed that the clock was still for sale and that he might be a little more willing to negotiate on the price and terms since several years had passed with no takers. What transpired next can only be described as a whirlwind of activity; contacting the Museum Trustees and Council members for support of the project, putting together a purchase agreement, making arrangements for transport, and, finally, setting out at 4 AM on a foggy October morning with two stalwart volunteers and the Museum Conservator in quest of the Engle clock.

Twenty-one hours, two snow showers, a wrong turn that routed us through Binghamton, New York, and a flat tire later, the Engle clock arrived at its new home in Columbia. Looking around at the sections and pieces of the clock in the warehouse, two things became immediately apparent. One was that we were very fortunate that all of the pieces were intact, and that there was an ample supply of material describing how it was supposed to look and function. The other was that we were looking at a restoration project which had assumed the proportions of rebuilding Berlin after the war.

The Museum staff was immediately assembled and assigned various responsibilities for the task that lay ahead. The numerous steps in the restoration process were identified, evaluated, and prioritized. It was ob-

vious that we would need the help of several experts for such tasks as regilding, dial painting, cleaning the backdrop scenery paintings, restoring the organ bellows and movements, and restoration of the 48 figures, several of which are articulated. It was also obvious that if we had not had an enormous pool of talented expert NAWCC members to draw from to help in these tasks, we would have been up the proverbial creek without a paddle. A list of volunteers (unknownst to them) was assembled and the delicate process of enlistment began.

Another thorny question which had to be addressed was: Now that we have the clock, how do we pay for it and the restoration expenses? I had received approval for the project on the premise that the chapters and members would support the idea and donate the funds needed for such an undertaking, and I started to get the uneasy feeling that I was standing on a three-legged chair with a noose around my neck.

With the help of the Museum Acquisitions Committee and with hat in hand, we started contacting the chapters. Spirits were greatly lifted when Philadelphia Chapter #1 responded with a \$9,000 donation, and the support started to roll in. Virtually every chapter I spoke to, and every potential volunteer we contacted, agreed to help in whatever capacity they were needed, and the Engle clock's phoenix-like resurrection began to take shape.

Besides the fundraising and restoration activities, another important aspect needing attention was the

gathering of as much historical background as possible on Mr. Engle and his clock. A plethora of newspaper accounts existed describing the functions of the clock and where and when it was exhibited, but we had very little insight regarding Engle himself and the subsequent owners and exhibitors of the monument clock. Fortunately, direct descendants of Engle still reside in the Hazleton area, and when contacted, furnished us with a wealth of written and oral history on Stephen D. Engle. The following biographical sketch is a compilation of the information we were able to gather from these and other sources.

Stephen Decatur Engle was born in Sugarloaf township, near Sybertsville, Luzerne County, Pennsylvania, December 18, 1837. His ancestors came from Holland in 1683, and settled at Germantown, near Philadelphia. He was raised on a farm, but his father was also a watch tinkerer, as were two of Stephen's brothers. Engle grew up with a fascination and knack for metal crafting and carpentry, which he employed to earn extra spending money. When he was twelve, he could turn wagon hubs, mortise them, and finish a hand wagon complete from the crude material.

People in his neighborhood nicknamed him "Stuffle," a name first dubbed on an old "crazy" fellow that occasionally came to Hazleton. According to Engle who claimed, "I don't know why, unless they thought me a little 'off.' I did not think so, however, if I was." Perhaps it was due to his gaunt and Ichabod Crane-type of build, as much as his early precociousness (Figure 1).

Engle was educated in a county free-school, three months of the year, and according to him; "This was all the education I received at that time; but I had begged, borrowed and stole a great deal since, which all must do to gain knowledge." Engle adds, somewhat immodestly, "Little did I think at that time that I should surpass the Great Strasburg Clock,

which the Germans told me so much about."

At the age of sixteen, Engle departed to Scranton with his brother to learn the "watch-tinkers" trade. He remained there for two and a half years until his sister Lizzie died. After her death he returned to Hazleton and worked for his brother, Sylvester. A few months later Engle moved to White Haven to commence business for himself. There he married Martha Ann Grenawalt on July 8, 1860. "The best day's work I ever did," Engle attests. At White Haven, Engle states he began experimenting on clocks. He returned to Hazleton where he practiced self-taught dentistry, made watch cases and jewelry, and kept experimenting with mechanical organs and timepiece movements.

According to several newspaper accounts, Engle began his monument clock in 1857, three years before he was married, and spent all of his spare time for the next twenty years working on it. However, it appears the clock was actually made in stages, and construction of the last stage seems to have begun in earnest in 1875, with the expectation of exhibiting it at the Philadelphia exposition in 1876. Engle missed his completion date by several months, which reportedly threw him into a depression for missing his chance to unveil his monumental clock at the centennial exposition.

Engle's depression was fairly short lived, apparently, since in 1877 newspaper accounts describe a Capt. Jacob Reid and his wife, who managed and exhibited the clock in various cities along the Atlantic seaboard. It is not clear whether Engle sold the clock to Reid, or whether Reid had a contract to manage and exhibit the clock. Also the clock did not reach its final stage until 1878, over one year after Reid began exhibiting it. One newspaper article quotes Reid as saying he paid Engle \$5,000 for it (York County *Independent*, Saco ME, February 12, 1878), but the fact that Engle continued to improve on the clock after Reid came

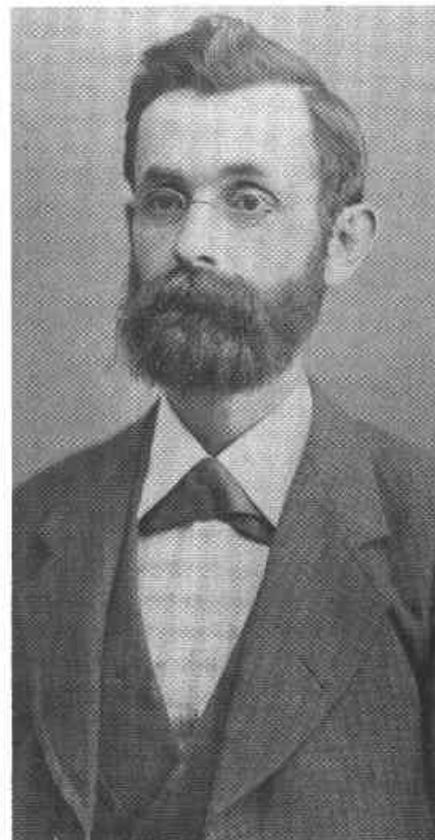


Figure 1. Stephen Engle at approximately the age he made his clock.

on the scene seems to contradict that statement.

Engle continued his inventive career after building his monument clock with several patents ranging from a tellurian in 1879 to a telephone transmitter in 1901. Several other inventions he patented included a dust-proof watch case, a process for bonding artificial dentures, an engraving machine, and an air rifle that, according to his grandson Dr. John Engle, "he had taken off the market because it was so powerful that the pellet would go through two inches of pine with just a couple of pumps."

Engle's reputation as an inventor spread, and visitors to his workshop included such luminaries as Thomas Edison and Harvey Firestone. One account given by Engle relatives describes Engle and Firestone being chased out of the family kitchen by Mrs. Engle for smelling up the house while testing vulcanizing techniques on the kitchen stove.



Figure 2. Stephen Engle a few months before his death.

Engle was involved in several business ventures during his checkered career, including a copper and silver mine in Honduras, the S. D. Engle Chewing Gum Co., the S. D. Engle Engraving Machine Co., and the manufacture of eyeglasses at his primary place of business, which included dentistry, in Hazelton. The copper mine, embarked on in 1889, was rather short lived, however, as a revolution overthrew the government, and the mine and its assets were seized by the new regime in Honduras.

The many facets of Engle's fascinating life seemed to revolve a great deal around his family. In spite of his myriad diversions, Engle managed to have nine children, and one can only imagine the patience Mrs. Engle had to develop in coping with that size family, and a husband that can best be described as "somewhat eccentric." All recollections of the family, however, describe Engle as a gentle, unassuming man, who enjoyed such things as taking rides in the new horseless carriages, but becoming nervous and agitated if the new in-

vention's speed exceeded 20 mph. He liked to smoke strong tobacco out of a corn cob pipe, and was remembered being constantly at odds with the antics of the family pet, a monkey named "Jocko."

Stephen Engle indeed enjoyed an interesting, if not enviable, life. His children and grandchildren remember him with a reverence and esteem only a man of that era and genre could produce. Engle died January 24, 1921 at the age of 83, an unusual man of many diverse accomplishments, whose achievements were epitomized by his most unusual clock (Figure 2).

Several interesting and curious facts have surfaced in researching Mr. Engle's monument clock. One was the discovery that Engle actually made three or four clocks, probably as precursors to his masterpiece. All were on a much smaller scale than the "8th Wonder," but do show a progression of ideas and craftsmanship in three distinct stages that culminated in his final effort.

Engle's first attempt at making an "apostolic" clock (Figure 3) apparently was the first stage in a process that eventually led to the "8th Wonder." This "first phase" clock, was reportedly lost in a fire, although it may have been cannibalized for parts in the second stage of development. Nothing is known about the movement(s) used in this particular clock, and they were probably not used in subsequent stages, except the tellurian, because the dial configuration was completely rearranged in the two later models. Engle also started to incorporate articulated figures in the later stages, which would have necessitated a redesign of the movements.

The discernable figures in the picture of the first clock are: Christ standing before the apostles as they march in procession, what appears to be father time below and to the left of the dial, Justice below and to the right of the dial, and the figure of death, in the form of a skeleton, appears in a small aperture directly above the dial. On two small turned

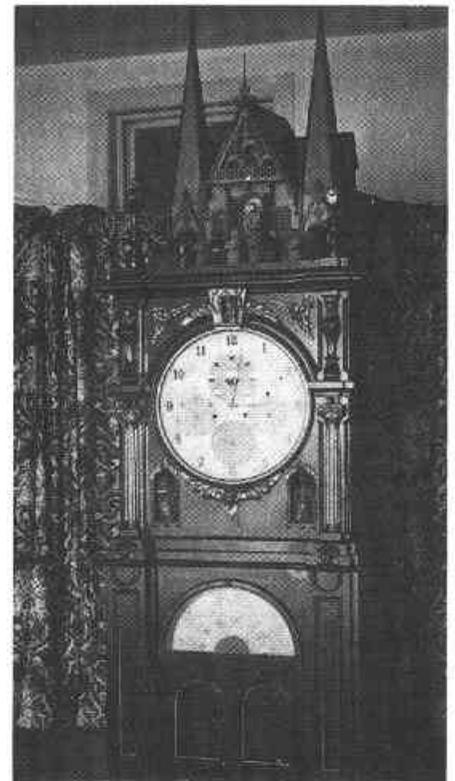


Figure 3. Stephen Engle's first Apostolic clock.

pedestals at each corner of the platform on which the apostles appear at the top of the clock are the figures of a Roman soldier at the left, and the cock that crows when Peter passes by on the right side. The tellurian consists of a large disk in the base of the clock that shows which constellations are visible in the night sky. All of the figures used in this "phase 1" clock are represented in different configurations in the latter phases of Engle's clock, but on a larger scale. If there was an organ movement in this first clock, it probably was of Swiss design and spring driven, since the base and case do not seem to have enough room or drop for a weight driven type of organ.

There is no record of Engle's first clock being exhibited publicly as were its successors. However, in the background in the top right corner of figure 3, there is a partially visible poster on the wall that says "facsimile of Strasbourg."

The second stage, or "phase 2," of Engle's clock had a single tower with twenty-six moving figures (Figure 4). The twelve apostles issue from a side

door, and pass in procession past the figure of Christ, who nods as each apostle passes. Peter turns away in denial as he passes Christ, at which time a cock flaps his wings and crows three times. Satan alternately appears from two windows above and follows Judas, the last apostle in the procession, from the side door.

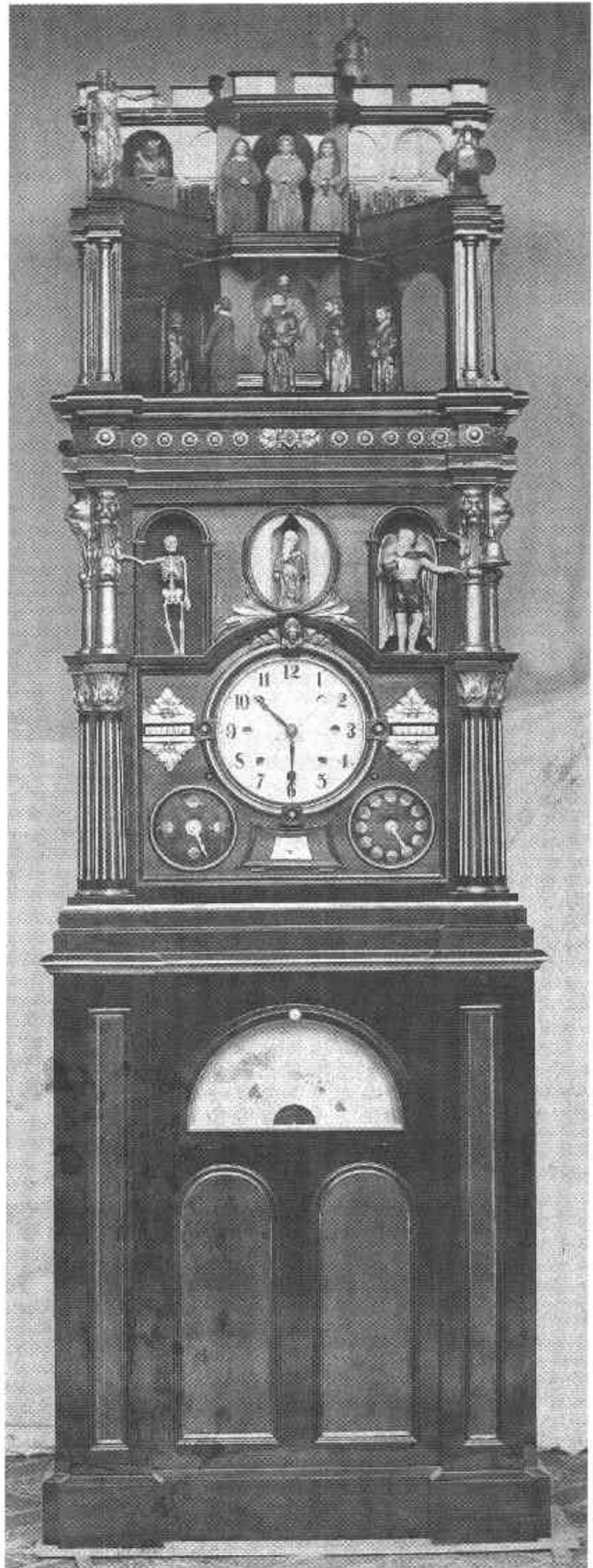
From a door which opens upon a balcony above, the three Marys walk out, while on the battlement-type roof a Roman soldier continually marches back and forth. The figure of Justice raises her scales while the apostles are passing, and drops them as the last one disappears. Youth, Manhood, and Old Age appear above the dial at the 1st, 2nd, and 3rd quarters. Father time, above 2 o'clock, turns an hourglass in his hand and strikes a bell with his scythe at the half hour. The figure of Death tolls the hour with a thigh bone on a skull on the hour, as a corresponding bell rings inside the case.

"Beautiful music and the chiming of bells are heard while these movements are transpiring. The apostles appear voluntarily at the hour and half-hour, but can be produced seven times beside each hour, and there is no time during the day or evening that this wonderful clock is not producing some one of its startling features," so states the *Mountain Beacon*, on November 22, 1877. Mrs. Reid was the featured lecturer, according to the *Beacon* article, and admission was 25 cents for adults and 15 cents for children under 12.

The base, which is almost identical to the "phase 1" clock base, except more elongated, has the same type of tellurian, and the elongated base was probably needed to provide a longer drop for the movement and organ weights, since the music described in this clock is from an organ movement built by Engle requiring a large weight. The figures are much larger than the first model, most measuring about 10 inches, and instead of simple carved wood figures, many of the phase 2 figures are articulated and all are made with wax heads and hands and other materials to give them a realistic appearance.

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Figure 4. Stephen Engle's second Apostolic clock (second phase).



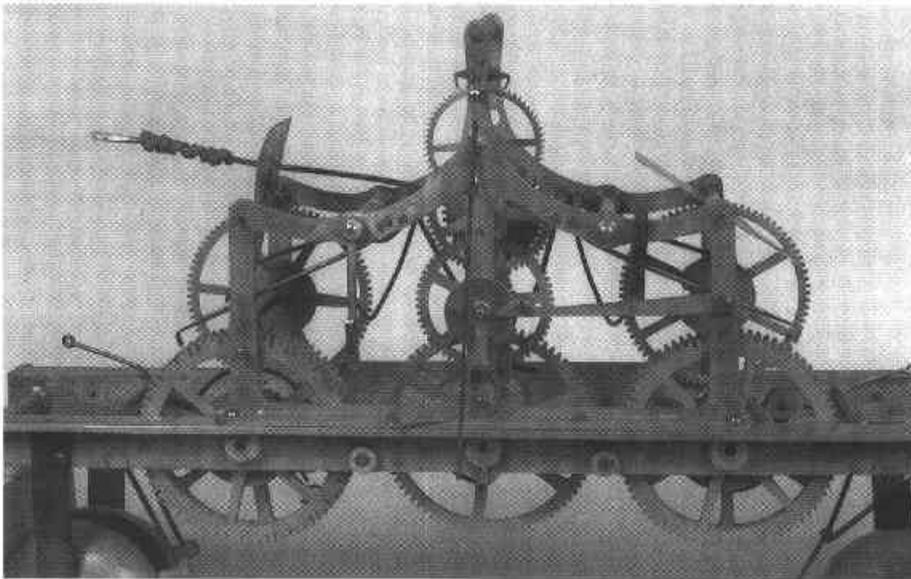


Figure 5. The main three-train movement of the clock.

The phase 2 clock measured a full 11 feet in height, had a nest of bells, and a large organ movement that played three sacred hymns and a Christmas carol. The movements are of exceptional quality, made from an alloy resembling bronze, probably developed by Engle himself, and show little wear and tear despite their long and rigorous use. The main clock movement (Figure 5) has three trains, the middle for the time and quarter hour figures, the left for Father Time and bells, and the right for Death and bell.

The indicators surrounding the clock dial—day of the week at 3 o'clock, axis of the earth at 4:30, day of the month at 6, tides at 7:30, and month at 9 o'clock—are manually operated with no indication of mechanisms ever being attached to the movements. The day of the month is an especially curious arrangement, in that two hinges can be seen below and on either side of the window showing the date. These hinges open the small area trimmed around the window to reveal a small stack of cards in a pocket behind the window, numbering 1 to 31. The proper number for the day of the month is merely put in the front of the stack and the small door shut. The hand showing the phases of the moon on the dial is also manually operated.

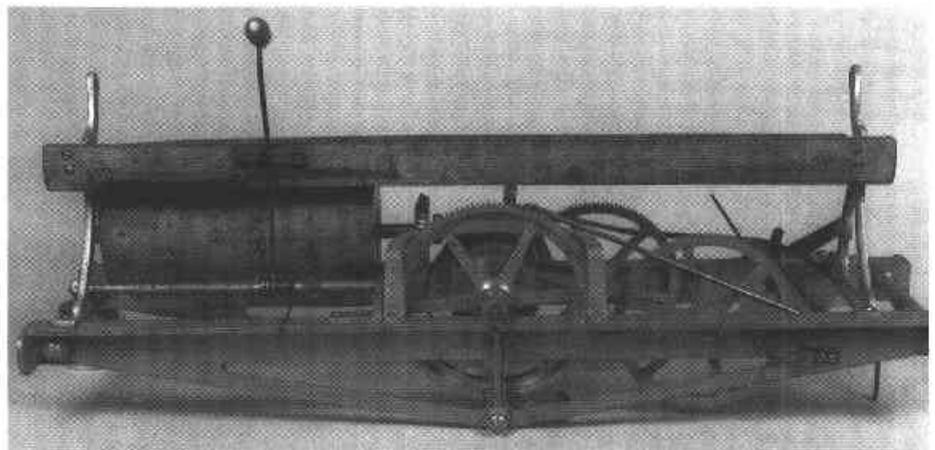
The lack of mechanisms to operate the calendar and astronomical functions in the Engle clock is understandable, given that Engle was probably hard pressed to have the phase 2 clock finished, and that the new configuration and articulation of the figures take up most of the available room in the case. However, it is rather incongruous that Capt. Reid distributed lithograph cards with a color picture of the clock on one side, and a "\$50,000 Challenge" on the other. The challenge stated, "1st. That Stephen D. Engle is the first and only man in the World, who ever invented and constructed, individually, an Apostolic, Musical, and Astronomical Clock. 2nd. That the Engle Clock does more and better work

than any Clock in the World." The challenge further elaborates that the clock ". . . operates more dials, has more wonderful mechanisms, and more delicate movements, beside being more beautifully designed and finished than any mechanical invention or work of art beneath the sun."

The flourishes of Capt. Reid's Victorian prose aside, the movements, of which there were three, plus the organ mechanism, in the second phase clock, are ingenious. The movement that operates the apostles and the three Marys as well as a nest of bells (Figure 6) sits behind and slightly above the main three train movement. The third movement, attached to the top of the tower, operates the Roman soldier, who constantly marches back and forth across the parapet. The second movement is powered by an approximately 30-pound weight. The smaller third movement takes about an eight-pound weight. All of the movements must be wound every few hours, and the organ mechanism, taking about a 35-pound weight, must be wound after about 10 minutes of operation, thus requiring almost constant attention while the clock is operating.

One of the probable reasons Engle kept expanding the size and scope of his clock is that imitations began to appear shortly after the 2nd phase clock went on exhibit. The immediate success of the Engle clock was largely due to its uniqueness. Nothing like it had been shown to the public before,

Figure 6. Movement which operates the Apostles and the three Marys.



and its financial success and fame quickly sent several “inventors” scurrying to build their own monument clocks and cash in on this new form of entertaining horology, thus starting a whole new genre of clocks that lasted until well after the turn of the century, and eventually numbering over two dozen. For the most part, these “imitations” used different patriotic and historic themes incorporated into their tableaux, but a few of the early ones were out-and-out attempts to copy Engle. One of the most blatant examples is the John Fiester apostolic clock (Figure 7), which not only incorporates most of the features in the same arrangements used in Engle’s phase 1 and 2

clocks, but was advertised as the “9th Wonder” when it was exhibited.

Early flyers of the Engle clock state on the cover, “BEWARE OF IMITATIONS—Remember this is the clock a description and engraving of which appeared in Frank Leslie’s Illustrated newspaper, April 13, 1878. The only clock in the world rightfully billed as the ENGLE CLOCK.” Fiester claimed he worked on his clock from 1867 to 1878, but it is more likely that it was started around 1877 and finished in 1879 or 80. Fiester reportedly did all the cabinet work and carving on his clock, but the mechanical works is a mixture of old, new, and modified clock parts, mostly tall case movements, with a Swiss

spring driven music box in the base. The window in Fiester’s clock that simulates Engle’s tellurian in the base is a rotating disc with several period portraits of unknown gentlemen taken by a Lancaster, Pennsylvania photographer.

In the spring of 1878, a new array of advertising materials appeared depicting a clock that is indeed impressive. Posters, a four page “newspaper” called the “Engle Clock Times,” and various lithographs and pamphlets declare “Strasburg Outdone!” and “A Triumph of Art.” The third and final stage of Engle’s clock, consisting now of three towers, two organ movements, forty eight moving figures, and a new type of tellurian,

Figure 7. The John Fiester Apostolic clock.

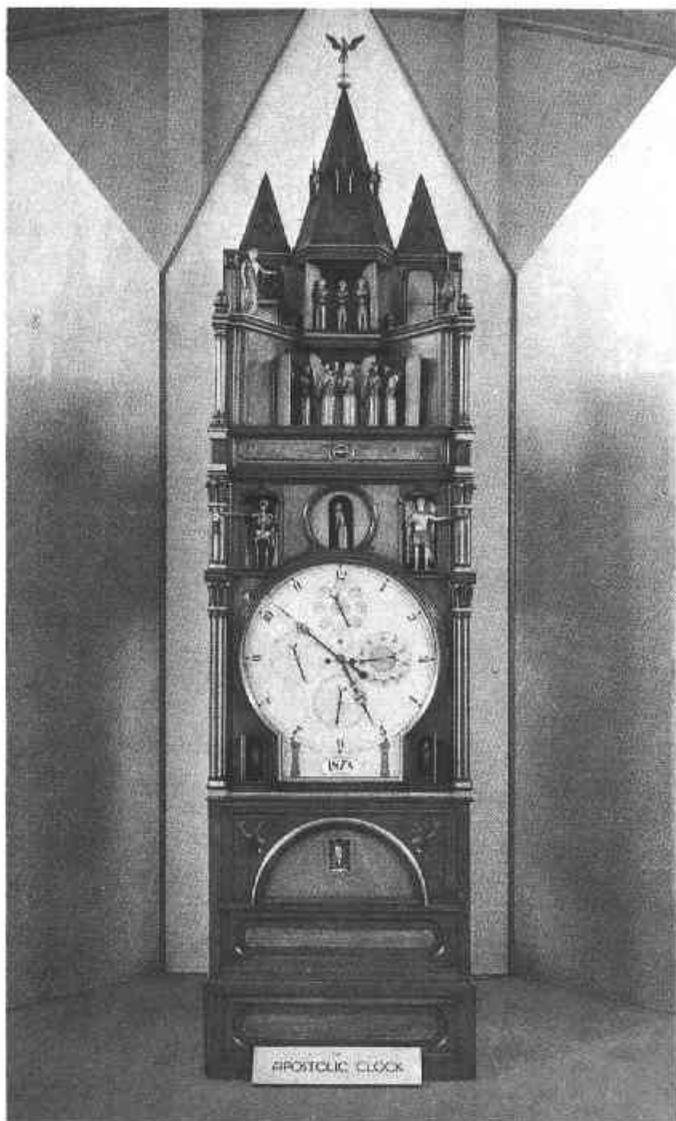
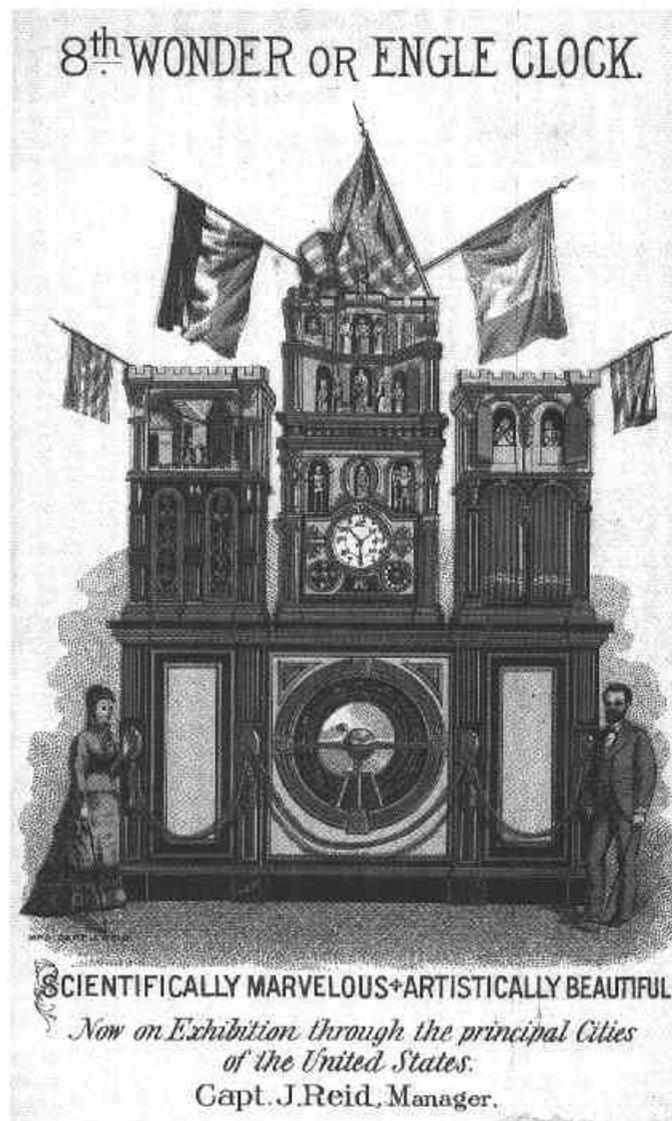


Figure 8. Copy of an original lithograph advertising card.



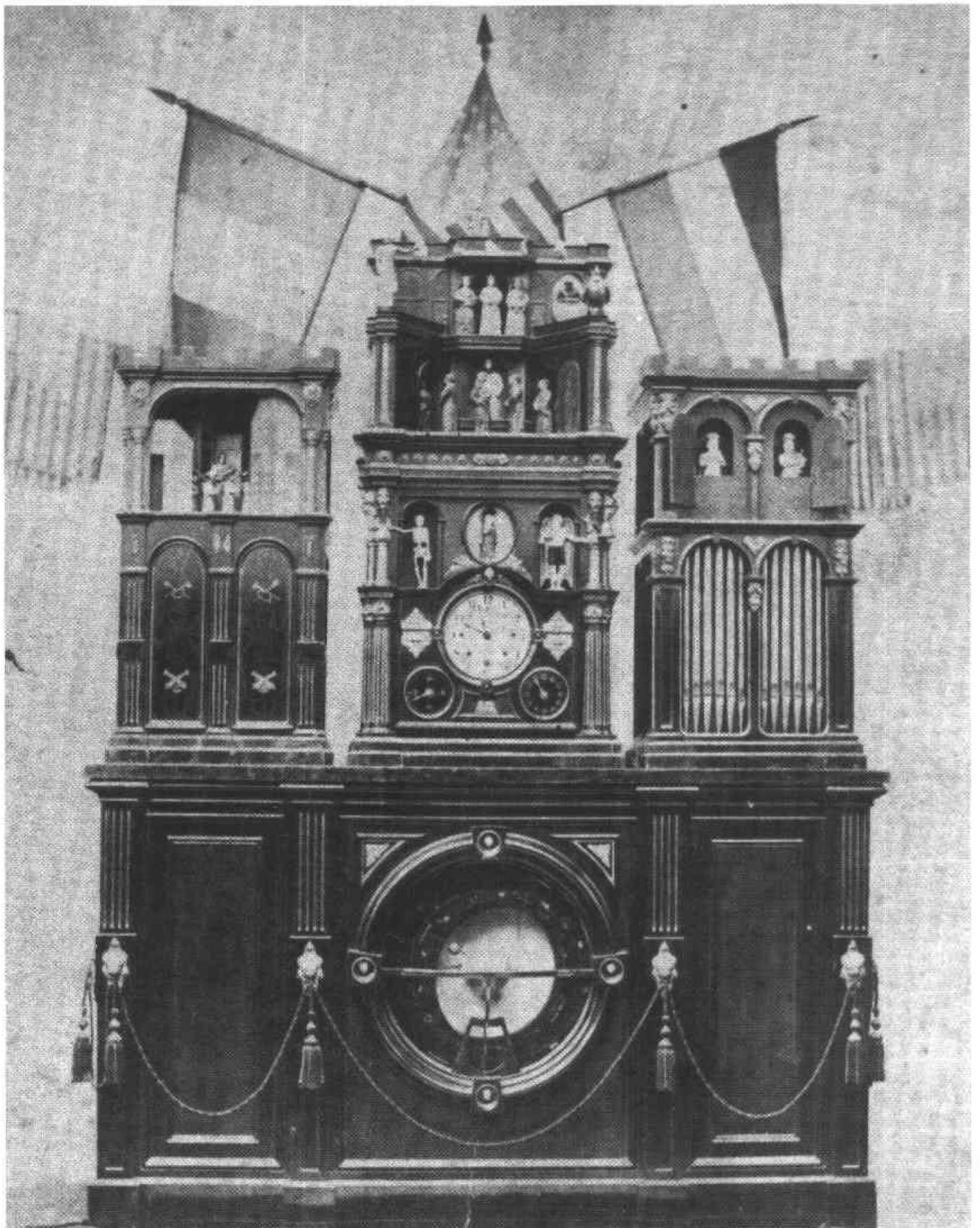


Figure 9. The final phase of Engle's clock as it was exhibited in the early 1900's.

is hailed as "Truly the 8th Wonder of the World." Capt. Reid outdoes himself in his use of superlatives, and the press is quick to agree with him. A York, Pennsylvania newspaper states, "The exhibition of this famous clock in York closed on Saturday night. Notwithstanding the several days of very inclement weather, the exhibition was exceedingly well patronized by the citizens of York and vicinity. During the week there were 7,982 cash admissions, and this flattering result, under the circumstances, goes far to show the intrinsic merit of the clock, and also that the public were not humbugged." (*York Daily*, January 14, 1878).

This final stage of Engle's clock (Figure 9) consists of nearly all of the original phase 2 clock, plus two additional towers and a new base. The organ movement in the base of the phase 2 clock has been moved to the right tower of the new enlarged clock, where the figures of Orpheus and Linus, the muses of music, appear from two doors at the top of the tower when it is in operation. The nest of bells in the movement that operates the apostles has been removed, presumably to prevent distraction from the two organs. The right tower organ plays its original hymns on the half-hour and the hour, as before, when the apostolic procession commences in the center tower, and gilded false pipes and flutings decorate the tower. The left tower adds the dimension of a patriotic flourish to the clock's theme with a depiction of the battle of Monmouth and patriotic tunes played by a fife organ. Amid painted backdrop scenery and a three dimensional rendition of a log fort, Molly Pitcher appears from one of the cabins, carrying her water pitcher and cheering on the Continental soldiers as they march off to battle.

It is not known why Engle chose the battle of Monmouth for the left tower tableau, other than because Molly Pitcher was a local Revolutionary war heroine from Carlisle, Pennsylvania, which is not too far from Hazleton. As history and legend have it, Molly Pitcher, whose real

name was Mary Hays, saved the day at the battle of Monmouth on June 28, 1788. While carrying water to the battle front for the thirsty soldiers (thus the nickname Molly Pitcher), she saw her husband, John Hays, fall mortally wounded while loading a cannon. Mary cast her pitcher aside and took her husband's place and "with tears running down her face, she rammed that cannon until the battle was won." According to legend, Washington personally gave her the rank of sergeant for her heroism.

The organ movement in the left tower plays six patriotic tunes in sequence on fife pipes as the Continental soldiers march to war. The tower is activated manually, presumably between the times the center and right tower are operating, by the ever present "lecturer." Both organ movements (Figure 10), although similar to some Black Forest organ movements, appear to be specially designed for the clock, since the same unique alloy used in the other movements is also in the organ gears and castings. The fife organ, (forefront in Figure 9) sits on its side, so the extended axle holding the drum can rotate the turntable (background, Figure 9) for the battle of Monmouth figures.

The tellurian in the base of the third phase clock is especially fascinating. A six inch globe rotates every 24 hours with the moon making its orbit around the earth every 29 and 1/2 days, and an elliptical dial, 25 inches in diameter, rotates around the earth every 365 days. The elliptical dial has the constellations, zodiac signs, and months of the year painted on a dark background. The whole tellurian is set in a box eight inches deep in the center of the base, below the center tower, and geared so that an hourly tug on a wire from the main clock movement to the tellurian mechanism advances the system. The basic mechanism for the tellurian was patented by Engle, and smaller models were manufactured as educational tools in astronomy.

The architecture of the three towers, while similar, shows some inter-

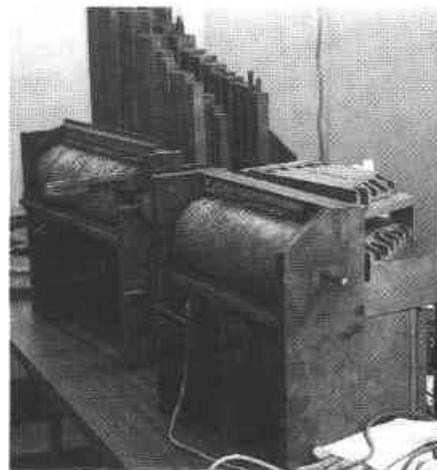


Figure 10. Organ movements designed and built by Engle for his clock.

esting differences. Each tower has its own variation of flutings, columns and cartouches. It is understandable that the center tower, which was the phase 2 clock, and predates the other towers, would have a slightly different construction. However, there are significant differences between the left and right towers in design.

Engle wanted to build even more elaborate and complicated clocks after the "8th Wonder", but was discouraged from such efforts by his family. Since his reputation was already made, and he was involved in so many other ventures, it probably wasn't too difficult to persuade Engle to close that chapter of his career. One can visualize, however, some of the grandiose designs his fertile imagination spawned as he puffed on his corn cob pipe in his later years.

The provenance of the Engle clock after the early 1890's is somewhat cloudy. Capt. and Mrs. Reid probably did buy the clock from Engle eventually, and made quite a comfortable living exhibiting it for several years, according to newspaper accounts. However, a 1932 Hazleton newspaper article states, "The Eighth Wonder of the World' will be on public exhibition during the entire month of June in the lobby of the YWCA, it was announced today. It will be exhibited by H. Eugene Smith, of Burdett, N.Y., who years ago purchased it from its builder, Stephen D. Engle." The article goes on to use the



Figure 11. Volunteers who helped restore the Engle clock with NAWCC Executive Director Tom Bartels, left to right: Lee Davis, David Morgan, Frank Snyder, Tom Bartels, Cas Woodbridge, Jack Shaull, and Jean Ankrum.

same florid descriptive phrases that were used in the 1880's broadsides.

This is the only account of Mr. Smith's ownership, and contradicts the claim of Capt. Reids' purchase of the clock from Engle, but does prove the monument clock was virtually on continuous exhibit from the time of its completion until the early 1950's. A Mr. Avery Wheelock purchased the clock in the late 1930's or early 40's and continued to tour the clock until its last documented exhibit at the Ohio State Fair in 1951.

A 27-page pamphlet, printed in 1944 by Wheelock uses the same prose found in the earlier descriptions of the clock, and claims that "it is without wonder that this clock has created profound sensation not only in America but throughout all Europe." There has not been any documentation indicating the Engle clock ever left this country, and Wheelock was probably just upholding the tradition of "artistic license" exhibited by the previous promoters of the clock. The pamphlet is signed by Mr. and Mrs. Avery Wheelock, 117 Sabine Street, Syracuse, N.Y. The Wheelocks also produced plaster of paris renditions of the clock, presumably to be used as bookends, with

the copyright symbol and ALW '45 etched on the side, and a description of the clock on a piece of paper glued to the back. These were sold for \$1.50 each wherever the clock was being exhibited.

Avery Wheelock retired in the early 1950's, at which time he stored the clock in a barn in the Syracuse area. The clock was already in a rather dilapidated condition and suffered numerous crude attempts to patch up the figures and finish during its more than seventy years of touring the country, which probably contributed to Wheelocks decision not to sell it. Upon Wheelock's death in the late 1970's his son inherited the clock, and began to make it known the clock was available for purchase. This led to the subsequent sale and removal of the clock to another barn in Connecticut, where it remained until it was acquired by the NAWCC Museum.

After ten arduous months of work following the NAWCC Museum's acquisition of the Engle clock in October 1988, the hundreds of hours of effort began to bear fruit. As completion of the restoration project neared, the media began to pick up on the story of the Engle clock's resurrec-

tion. Newspapers and magazines, including the *New York Times*, *The Philadelphia Inquirer*, *The Los Angeles Times*, and the *Lancaster Intelligencer Journal*, carried color photos and full page spreads on the Engle clock and the NAWCC's efforts to restore it. Several television news spots and a segment for *Good Morning America* were taped extolling the virtues of the Engle clock. The "8th Wonder of the World" was again entertaining and mesmerizing a whole new generation of admirers, capturing the imagination of young and old alike.

On September 16, 1989, the NAWCC Museum hosted an unveiling ceremony of the completely restored Engle clock. With flags flying above its turrets and gold ropes gracing its base, the clock was again in its full glory. The ceremony was well attended by the media, volunteers, staff, and contributors to the project (Figure 11). Several members of the Engle family were also in attendance, and held a reunion in honor of the occasion.

Members of the NAWCC can be proud of the Association's commitment, resources, and ability to accomplishing a project the size and scope of the Engle clock restoration. Not only has the Association preserved a unique piece of American horology, it has also greatly increased public awareness of the NAWCC and the Museum. The Engle clock has become an important tool in taking our message to the public. The public approves. I'm sure Stephen Engle would also approve.



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