



Amesbury Thermometer Company

1903 - 1913

Mike Harrold
Industrial Survey Volunteer

Amesbury Carriage Museum
Amesbury, MA

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Amesbury Thermometer Company

At the Mechanics Row industrial complex

An industrial complex developed on Mechanics Row, off Main Street at Patten's Pond, from the 1867 inception of the Locke & Jewell carriage-wheel factory. Prominent among the group was the adjacent Pettingell Machine Co. producing wheel-making machinery. After rebuilding from an 1887 fire, the factories burned again in 1891. Locke & Jewell never rebuilt. However, W. Irving Atwood (of the carriage lamp making Atwood Brothers, who also started on Mechanics Row) constructed a new factory ca. 1895-6 on the former Pettingell site to begin the Eastern Cycle Co. making bicycles. Within a few years Eastern Cycle moved to the Babcock Building on Carriage Hill. Their old factory remained vacant until occupied in 1902-3 by the Amesbury Thermometer Company.

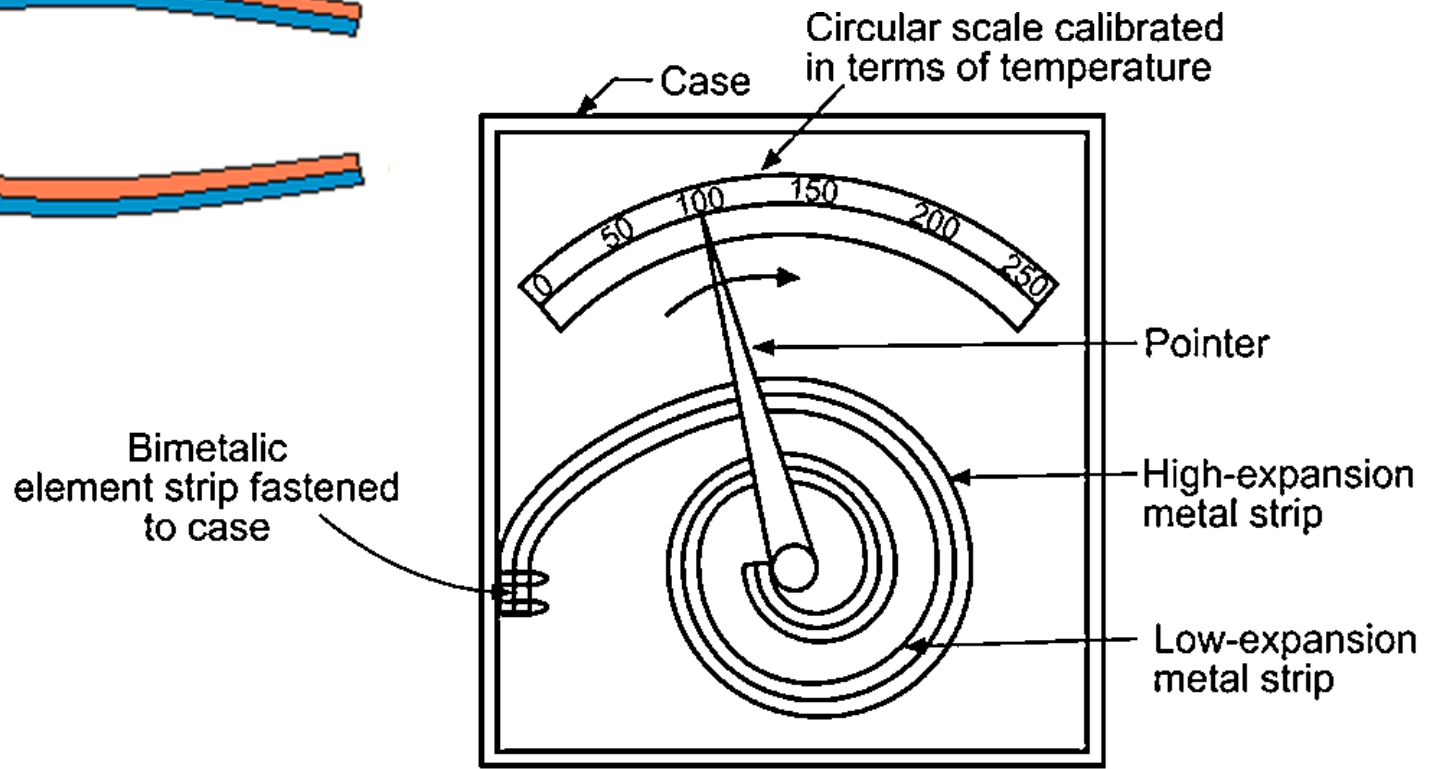
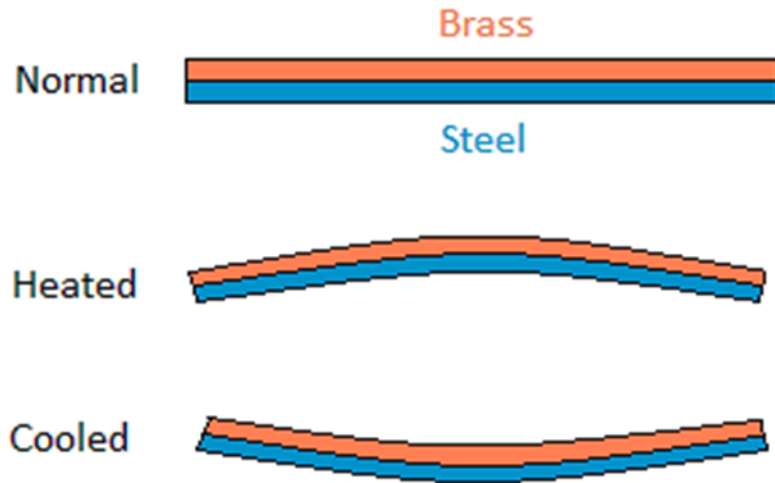
The new company's product was a coiled bimetallic-strip dial thermometer (next page), the strip being a laminated metal ribbon of steel on one side and brass on the other. Early examples from the late 1700s had joined the two metals by riveting together two separate strips, but by 1800 molten brass was being fused directly onto steel to form an intimately bonded single entity. Beyond the process of fusing bimetallic strips, the Amesbury thermometer was a relatively simple mechanism housed in a light brass case with a dial of either paper or later glass-enamel, the latter being obtainable from such sources as the Ohara Dial Co. of Waltham. Their building had a basement and two floors with steam heat and a gasoline engine to power machining operations. They were described in 1910 as also having an electric motor. Plating and forging were performed in the basement, with machining on the first floor and assembly on the second.

Bimetallic thermometers were more physically robust than were traditional glass-tube thermometers containing mercury or red-alcohol. They also had advantages of being easy to read and of producing sufficient motion to trip electric switches or move mechanical devices in regulation with temperature.

Coiled Bi-metallic Strip Thermometer

Strip curls/uncurls with temperature changes, rotating pointer hand

Bimetallic strip



Thermometer in Unusual Oval Calendar Watch of 1822

9/30/2022

sector thermometer dial below round time & date dial in French watch by Breguet

Performance errors resulting from temperature changes were the primary barrier to practical timekeeping, with the result that the bimetallic strip was invented by watch makers ca. late eighteenth century to correct temperature error. They immediately realized that the device could function as a straightforward thermometer, soon incorporated into some luxury timekeepers. This example tells time by only one hand (indicating 10:15), the shorter hand being the date pointer.



Sector dial thermometer

Oval bimetallic strip



Photo from *The Art of Breguet auction*, Habsburg Auctioneers, 1991, pg. 98

Amesbury Thermometer with Sector Dial, in Gilt Case

ca. 4 inches tall desk piece, pot metal case, signed on back:
Jennings Brothers Mfg. Co. Bridgeport, Connecticut



Photo courtesy Amesbury Carriage Museum

Amesbury Thermometer in Gilt Case

showing internal mechanism

The mechanism resides on a metal plate that is soldered into a circular brass rim. The long thin bimetallic coil is held under a bridge that is screwed to a brass base plate, while the outer end of the coil is screwed to a split post in such a manner that the length of the coil can be adjusted by moving its attachment point. With changes in temperature, the coil will change curvature such that it will slightly expand and contract in diameter, and will rotate the temperature pointer hand that is pivoted at the inner end of the coil. Spacing between individual turns of the bimetallic coil is maintained such that they will not rub together and interfere with free motion as temperature changes. The relatively simple mechanism is of moderate quality.

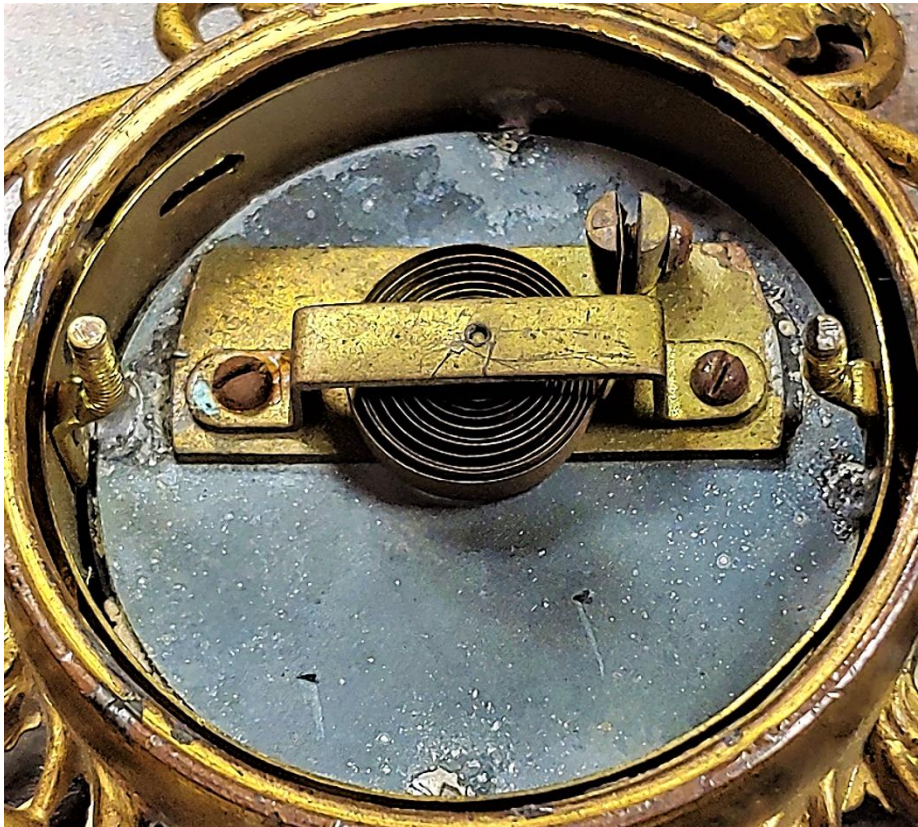
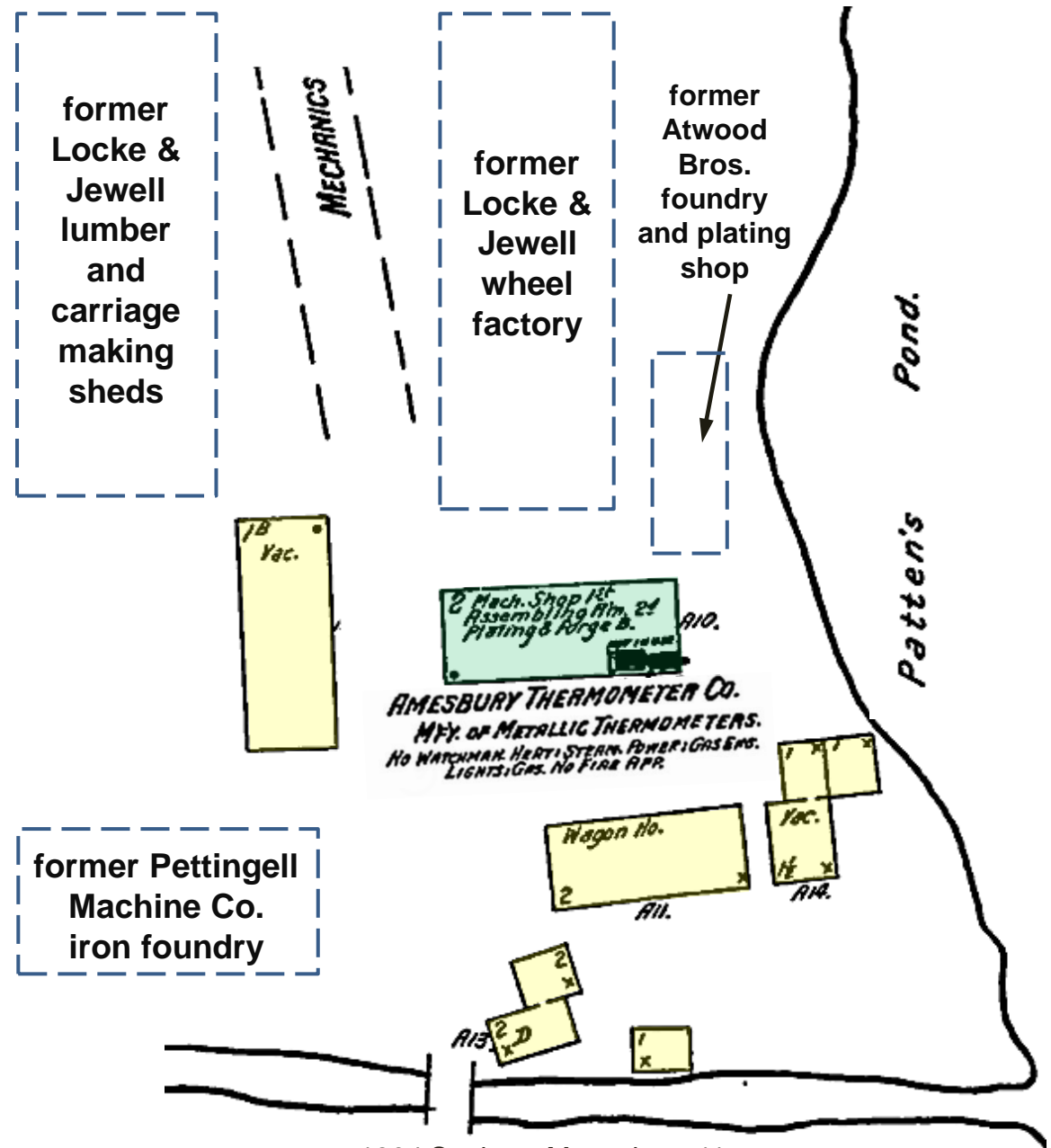


Photo courtesy Amesbury Carriage Museum

Amesbury Thermometer Company – 1904 Map on the Mechanics Row site of former Pettingell Machine Co.

Mechanics Row had hosted numerous factories, but most had either burned or been taken down, as indicated by dashed outlines of buildings gone when Amesbury Thermometer arrived. Beside the thermometer factory initially were former carriage making sheds plus a vacant duplex dwelling across the street. Those had been removed by 1909, leaving Amesbury Thermometer as the last factory building, accompanied only by the dwelling next to the creek.



1904 Sanborn Map, sheet 11

John W. Miller of the Amesbury Thermometer Company

The origin of Amesbury Thermometer Co. is explained in the obituary at right (the timing hints at the possibility that Mr. Miller could have been a victim of the 1918 flu pandemic). Mister Miller had worked with bimetallic thermometers in Peabody, Mass. for 20 years, leaving certain that he was associated with the Standard Thermometer Co. of Peabody. Standard Thermometer made a similar product and enjoyed a longer lifespan than the Amesbury company. By 1910, Amesbury Thermometer had become a branch of the Standard Thermometer Co. and was identified as such on maps and in news articles. It appears that the local factory was then expanding into a wider range of industrial products under Standard Thermometer patents¹.

Coincidentally, the next occupant of the Amesbury Thermometer factory was spark plug manufacturer, Randall-Miller, where the latter was a John Miller Jr. of Alston, Massachusetts². Based on this obituary he was not related to the thermometer John W. Miller.

1) Amesbury Daily News, June 8, 1910, pg. 2

2) Amesbury Daily News, March 9, 1915, pg. 3

A LOCAL INVENTOR IS DEAD

John W. Miller the well known inventor of the metallic thermometer manufactured by the Amesbury Thermometer Co. died after a short illness last night at the Anna Jaques hospital. His age was 67 years, one month, 24 days.

He is survived by a widow, one son Dr. Louis Miller, Peabody, Mass.; two daughters, Mrs. C. W. Putnam of this town and Mrs. Amella LaRocque of Salem, also one brother in Germany.

He was a member of Geo. Peabody Lodge, No. 18, A. O. U. W., of Peabody.

The family resided in Peabody before removing to this town 12 years ago. For 20 years he worked upon the metallic thermometer before the Amesbury Thermometer Co. was organized in this town to manufacture it. He invented and made many improvements on the thermometer never taking out a patent for his inventions but turning them all into the company.

Amesbury Daily News, June 18, 1918, pg. 2

Standard Thermometer Company

Factory with lettered front in Peabody Square, Peabody Massachusetts

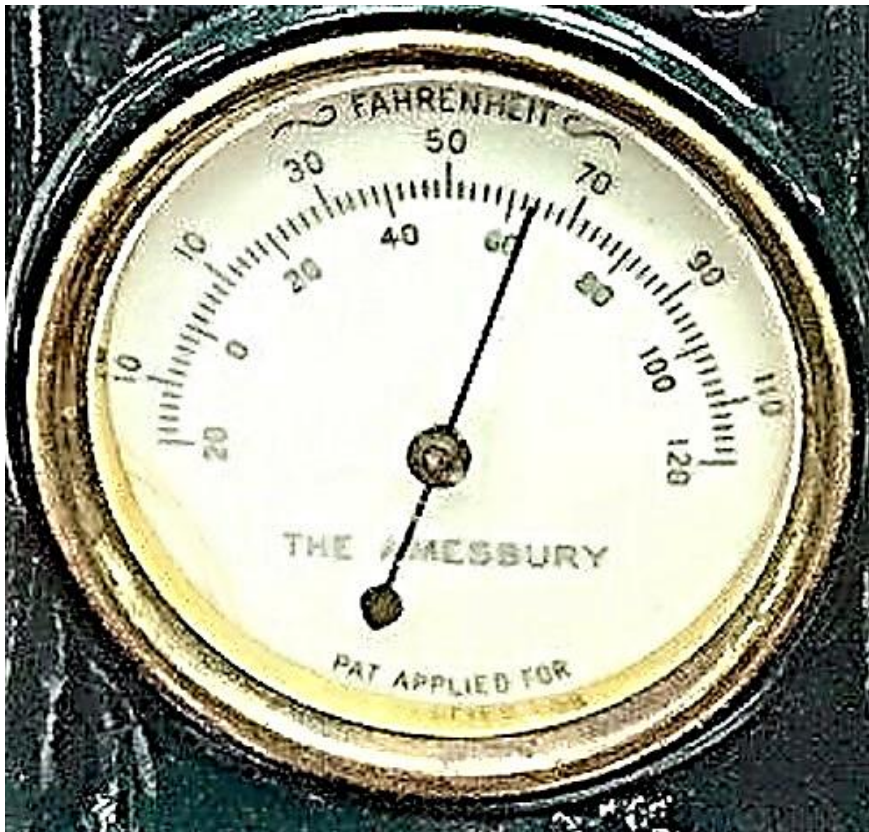
The Standard Thermometer Company was founded in Peabody Massachusetts in 1885, lasting into the 1930s. They occupied their building in Peabody Square until at least 1901, but had relocated to Roxbury, Boston by 1909. A Standard dial thermometer was advertised in the 1936 CENCO catalog. Below, ca. 1900, is the factory on Lowell St. a block up from Peabody City Hall.



Photo from collection of Peabody Historical Society

The Small-Sized Amesbury Thermometer

Shown below is the small (2¼ inch diameter) thermometer identified as “The Amesbury”. These were perhaps retailed directly in brass cases but this example resides in a cast art nouveau case by Jennings Brothers below a larger diameter clock (see next page). Such thermometers were provided by ATCo. in light brass housings having a brass bezel around their glass-enamel dial, a curved glass crystal, and a gilt cover on the back, the assembly held together by two nuts visible on the back. This back cover may be the item described as made at the factory in a two-stage press, where one stage would have been forming the dish and lip of the cover while the other stage was piercing the decorative cutouts.



Jennings Brothers' Manufacturing Company, Bridgeport, Connecticut

Cast case having clock above and Amesbury thermometer below

JENNINGS BROS. MANUFACTURING CO

FACTORIES, PLANTS, SALESROOMS, SHOPS AND WORKSHOPS: OLD IMAGES

The firm was founded in 1890 in Bridgeport (Conn.) as manufacturer of jewelry boxes, candelabra, clocks, bookends, statues and silverplate flatware. In 1906 a salesroom was opened in New York.

Jennings produced a large variety of items made in "ormolu" (trademark J.B. 'Ormolu Gold') and bronze ('Nouveau Bronze'). In the 1890's/1900's the firm patented various design in 'Art Nouveau' style for clock cases and candelabra bases.

Jennings Bros. Mfg Co production is marked J.B. accompanied by a factory or catalog number (3 or 4 digits). In some cases the item is marked "Trademark J.B. Signifies the Best".

The firm went out of business in 1953 and the dies were purchased and used by another company to manufacture cheaper replicas of the original production.

<https://www.silvercollection.it/DictionaryFactoryJennings.html>



Photo from item on etsy.com

Jennings Brothers' Manufacturing Company

Stand-alone Amesbury Thermometer

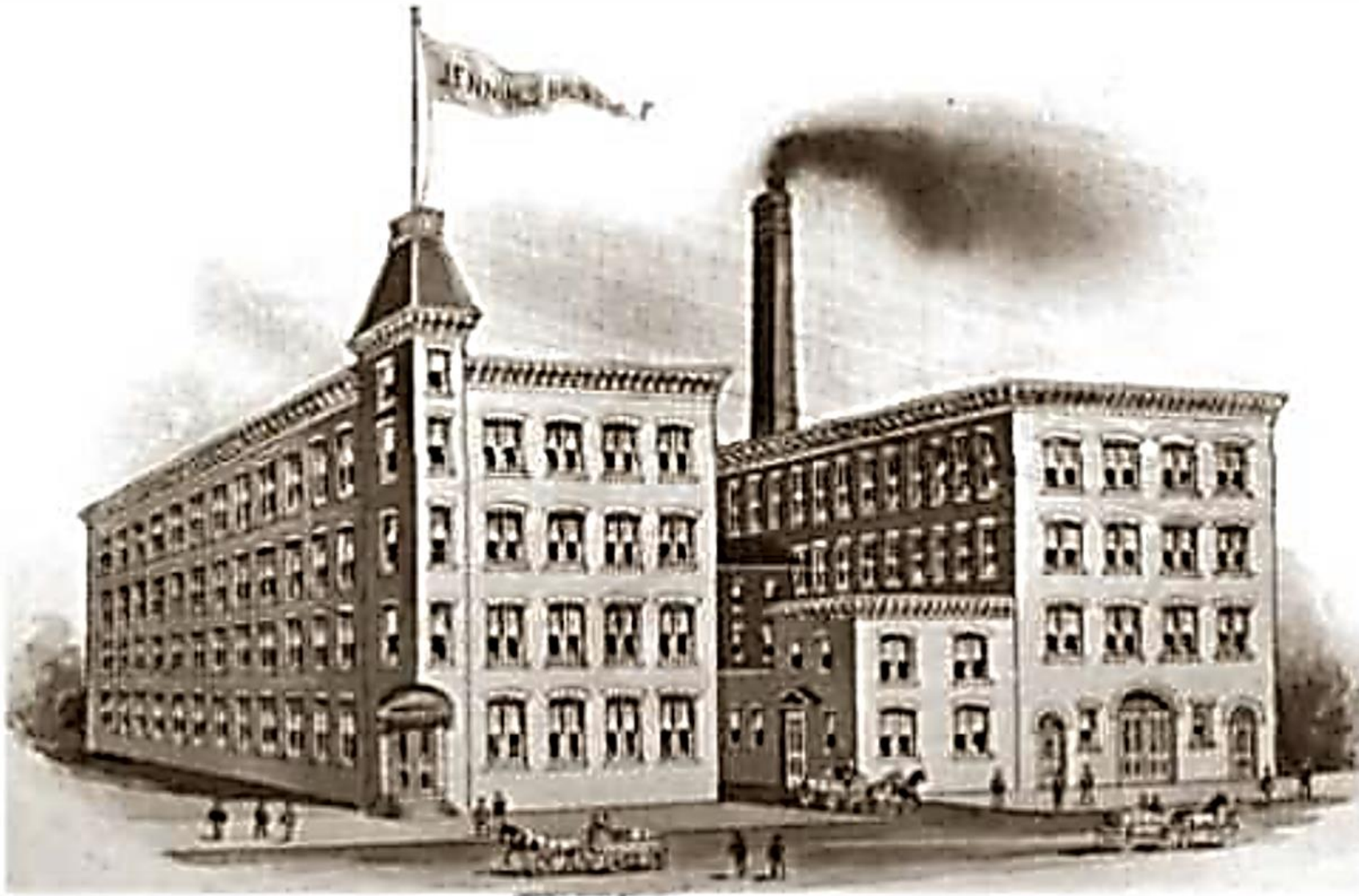
The Jennings family were 1600s settlers of coastal Connecticut in the region around New Haven, Bridgeport, and Fairfield. By the 19th century family members were associated with various branches of Connecticut brass clock and watch manufacture. The Jennings Brothers Manufacturing Co. produced a variety of art nouveau pot-metal castings as statues, candlesticks, jewelry boxes, bookends, and clock cases, some of which served as individual finished cases for *The Amesbury* thermometer insert.

It is unclear whether the original Amesbury company had any other product than this small diameter thermometer. Given their relatively common occurrence in such cases, Jennings Bros. may have been a primary Amesbury Thermometer buyer. The range of Amesbury products and customers could thus have been precariously limited, leaving the company with weak business base.



Photo from item on etsy.com

Jennings Brothers' Manufacturing Company Bridgeport, Connecticut



<https://www.silvercollection.it/FACTORYJENNINGSbis.jpg>

JENNINGS BROS. MANUFACTURING CO., BRIDGEPORT.

Standard Thermometer Co. of Amesbury

BUSY PLACE AT FACTORY OF STANDARD THERMOMETER CO.

Little but O My,' can well be applied to the Amesbury plant of the Standard Thermometer Works

It will be well worth anyone's trouble to make a thorough inspection of this plant provided an occasion may be found when Treasurer, C. W. Rowell has a half hour to spare

The building on Mechanics Row is filled with machinery from basement to roof and the orders come in so fast that the operators have very few idle moments

The Amesbury factory devotes nearly its entire energies to the manufacture of the heat indicators, which are used on nearly every make of cooking stoves and ranges

Large shipments of these goods are

Large Orders Received For Their Heat Indicators

made to nearly every stove manufacturer in the country as the Amesbury patents are considered to be superior to all others

The Standard Thermometer Co. have recently gone into the manufacture of speedometers which are made in the Roxbury plant. A large line has been placed on the market covered by exclusive patents and a large volume of business has resulted

C. W. Rowell who has full charge of the local factory is in the west at present for a short vacation. He is very proud of the achievements of his company and it is safe to say that he will be glad to show any interested visitors over the local plant whenever he has the time to spare

Amesbury Daily News, June 8, 1910, pg. 2

The Large Amesbury Thermometer

This large version (8-inch diameter) Amesbury thermometer, previously produced by Standard Thermometer Co., presents the finer image of a more serious instrument. This style was produced in four, six, and eight inches diameter.

Standard Thermometer likely gained control of the Amesbury factory during the recession of 1907-8, but had certainly done so by 1910. Standard had a wider range of finer products and clients for them, as seen from the article presented in its entirety on following pages. They made air dampers for controlling ovens to temperature and had a year-running recording thermometer for compiling seasonal temperature data.

By late 1913 the company had concluded to leave Amesbury because of the costs of water, gas, insurance, and taxes compared to other locations.



<https://www.analogweather.com/-amesbury-dial-thermometer.html>

The Large Diameter Standard Thermometer, Early 1890s Adverts

HOUSEHOLD DECORATIVE ART.



The Difference

The Standard Thermometer for all uses,

— MANUFACTURED BY —

Standard Thermometer Co.

PEABODY, MASS.

NEW YORK OFFICE: Room 413, 18 Cortlandt Street.

These adverts make clear that the large dial thermometers were a previous product of Standard Thermometer Company, and point out several aspects of what was a relatively novel device for its time. The above intends to show how easily read a dial thermometer is compared to traditional glass-tube thermometers.

The upper portion at right describes that the dial thermometer is visibly akin to a clock, which is a surprising new development for the un-initiated (as was our phones becoming visibly akin to our calculators). The bottom line at right describes related thermometer products functioning as components in larger mechanical systems. The company also promoted that such devices could function with electrical circuits.

1891 advert above, 1894 advert at right, found on ebay with no magazine sources mentioned.

A Small Boy



once called a countryman's attention to a curious-looking clock hanging outside a dry-goods store.

On investigation it proved to be a

Standard Thermometer.

“Why,” said the countryman, “I knew of those thermometers before you were born, and they are by all odds the

Best Made.”

Made by the

STANDARD THERMOMETER CO.,
PEABODY, MASS.

NEW YORK OFFICE: 18 Cortlandt St., Room 413.
BOSTON OFFICE: John Hancock Building, Room 422.

SEND FOR CATALOGUE No. 27.

We also make Thermometers for mechanical uses.

Description of Standard Thermometer Co. of Amesbury

Amesbury Daily News, September 30, 1913, pg. 2

GREAT DEVELOPEMENT OF A LOCAL INDUSTRY

Fear That We Shall Lose it for Local Conditions

It is not long since that we used to look upon the thermometers made by the Amesbury Thermometer Co. with considerable skepticism and the brass bound card board dial one, that used to hang in front of the Daily office was considered very unreliable.

A former, well known Market Sq. merchant once remarked to the manager of the factory that his thermometer was nothing but a piece of metal that expanded and contracted with the heat and cold but when the manager asked him what a mercury thermometer was he hesitated for a considerable time and finally said: "I never thought of that."

The principle upon which the Amesbury Thermometer Co. made their thermometers has demonstrated itself to be a most excellent one and upon it has been built a large and most prosperous business now conducted by the Standard Thermometer Co.

They have spent thousands of dollars in fitting up their factory on Mechanics Row so that it is a model of efficiency and with its numerous complicated and most powerful machines turns out every part of the thermometer except the dial which requires immense heat to do the enameling which is made where they have natural gas,

It is very interesting to visit their factory and go through the three floors and see the different processes that are carried on before the thermometers are finally assembled. In the basement they have a large plating department where all their nickle and copper work is done in a first class manner. The buffing is also done on this floor quite a few being employed in that department. Here is also located the powerful presses that do wonderful work in pressing out from steel all of the various forms desired one press in particular which has a double movement is great in its efficiency.

A fireproof room in one corner of the floor contains the costly dies which run up into many thousands of dollars, a single die costing six or seven hundred dollars.

The heating plant also the gas engine and electric motor that supplies the power are located here.

On the second floor the machines are about as close together as it is possible to place them and yet have room to work. Some of the automatic machines are almost human doing as many as nine different parts. Every machine has to do its work perfectly for some of the adjustments are as fine as those on a watch.

The stock room and office is also on the second floor.

On the third floor the finishing touches are put on and many girls are here employed. Here the thermometers are all tested very thoroughly before being assembled. Here also the assembling is done and they have a very practical machine that makes their paper boxes, many thousand of which are used during the year.

At the front end of the floor is located the final testing room where all the thermometers are giving a final testing, before they leave the factory. They have a large revolving rack that constantly moves and the thermometers have a chance to get the changes of air that may happen to be in the room.

The expert of the factory also has a room on this floor and he was at work yesterday upon the latest product of the factory which is a wonderful recording thermometer for which there is a large and increasing demand. It is made in the circular form about eight inches in diameter and four inches deep. There is a dial that is ruled very closely with usual range of thermometer from below zero to over 100 upon seven sections of the dial. There is an eight day clock placed inside the thermometer which is attached to the dial and so adjusted that one section is moved each day. The "lamina" which is the vital part of the thermometer is located at bottom of the dial to which is attached a flexible arm having a pen on the end of it which can be regulated to feed any colored ink. So nicely is this adjusted that the pen will record on the dial the exact standing of the thermometer every hour, in the day and night for a whole week. At the end of the week a new dial is put in and the record can be referred to at any time. It can be used on the same day the next year and a different colored ink used so that the difference in the weather conditions of the two years can be clearly noted.

There is an attachment that the company make for these thermometers that will ring a bell when a certain temperature is reached. They are also made with a long arm reaching through a wall so that the temperature can be read upon the outside. They are used in tobacco barns and other places when the temperature has to be watched very closely. Also is very valuable in orange groves in California to warn them when there is danger of frost.

The company have one of these recording thermometers upon the front of their factory which it will pay any one who is interested to go and look at it.

While there are many of these thermometers used for recording the weather the greatest demand for their product is over dampers a use to which a mercury thermometer cannot be put. These the company turn out by the thousands sending them all over the country and Canada and their product ranks as the very best made in the country.

Another product of the factory is a thermostat that has a wonderfully large sale averaging about 2000 per month. They manufacture it solely for one company in Minneapolis who control the sale of it for the country and take the local company's whole product.

This is made to regulate the heat of the furnace steam or hot water heater and has been on the market 20 years with the greatest success. By setting it at a certain temperature it will open or close the dampers regulating the heat in a manner that is not only most convenient but is economical for fuel. There is quite a little mechanism to it beside the arrangement made by the Thermometer Co.

Description of Standard Thermometer Co. - Continued

At the present time there are about 30 employed at the factory but when very busy there are between 50 and 60. It is a manufacturing business that hires first class mechanics and pays high wages to them. It runs steady the year around and is a pity that we can't keep it here in town. The management have many grievances in regard to the high cost of the water, gas, insurance and taxes that are almost prohibitive compared to what they pay in other places.

They are just upon the verge of moving some of their machines are skidded up and it looks as if they would go,—but an effort is being made to hold them. The Board of Trade have a special committee at work upon the gas company, the water commissioners and assessors and if they can secure concessions which the committee think should be granted, we may be able to hold them. It is to be hoped that our town officials especially will do everything—in their power to give the company encouragement enough so that they will not move.

Johnson Controls Co. appears to be the Minneapolis company referred to on the previous page. The figure below illustrates Warren S. Johnson's thermostat using a bimetallic thermometer coil to activate an electric switch (Patent 201,207 July 24, 1883).

