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The

Family of Carriage Makers

by

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Industrial Survey Volunteer

Amesbury Carriage Museum
Amesbury, MA

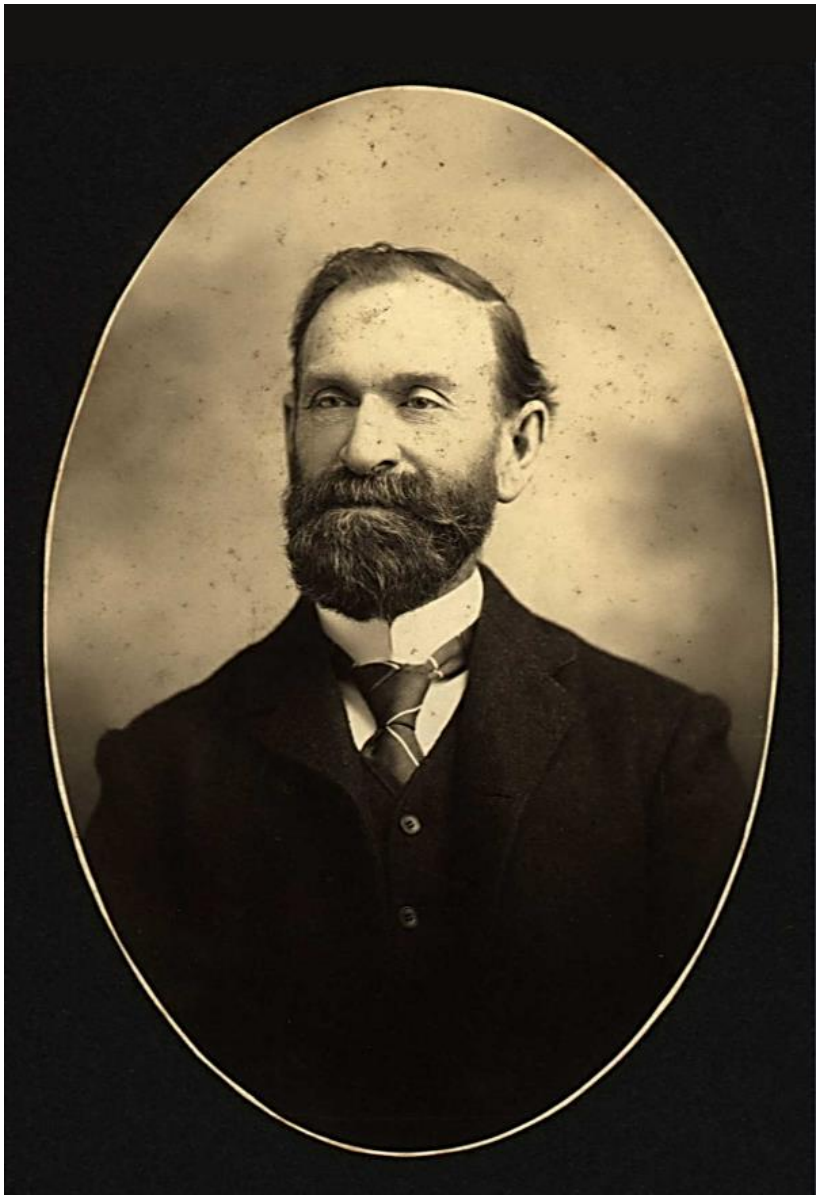
May 10, 2020

THOMAS W. LANE 1840-1935

LOW-COST

CARRIAGE

KING



found on Ancestry.com account of asquam56

AMESBURY'S

LAST

CARRIAGE

MAKER

Summary

Thomas Warren Lane was a long-standing and successful carriage maker with businesses locations and a residence in the Elm Street area. He was the leading practitioner of a minimalist manufacturing method in which the nominal “maker” acquired major portions of the carriage as raw unfinished sub-assemblies. Capital investment was thereby minimized while maximizing flexibility to produce a wide variety of vehicles. He aggressively drove this business until becoming the highest volume maker in this class, while expending the lowest labor input per vehicle of any carriage maker in town. He was blessed with longevity, operating the last carriage shop in Amesbury (until about 1927) and living to age 94.

Many thanks are owed to Mrs. Joyann Reynolds for assembling an enabling body of research to launch this study, and to Mrs. Dorothy Williamson, a descendant of Thomas Lane’s oldest sister, Emma Susan Lane, whose collection of family information and photos contributed hugely to filling out the richness of the result. All family photo portraits are from Mrs. Williamson.

Early Years and Coming to Amesbury

Thomas Lane was the second born in Hampton, N.H. among eleven children to Thomas and Emily (nee Walton) Lane, their father being a farmer and blacksmith. An older brother died quite young, leaving Thomas functionally the oldest child. At least several of the boys learned blacksmithing at home, and all five eventually worked in the Amesbury carriage industry. Other family members also ended up living in Amesbury. (Amesbury and Salisbury were then divided at the Powow River, so that the "Amesbury" was then the Elm St. area of Salisbury.)

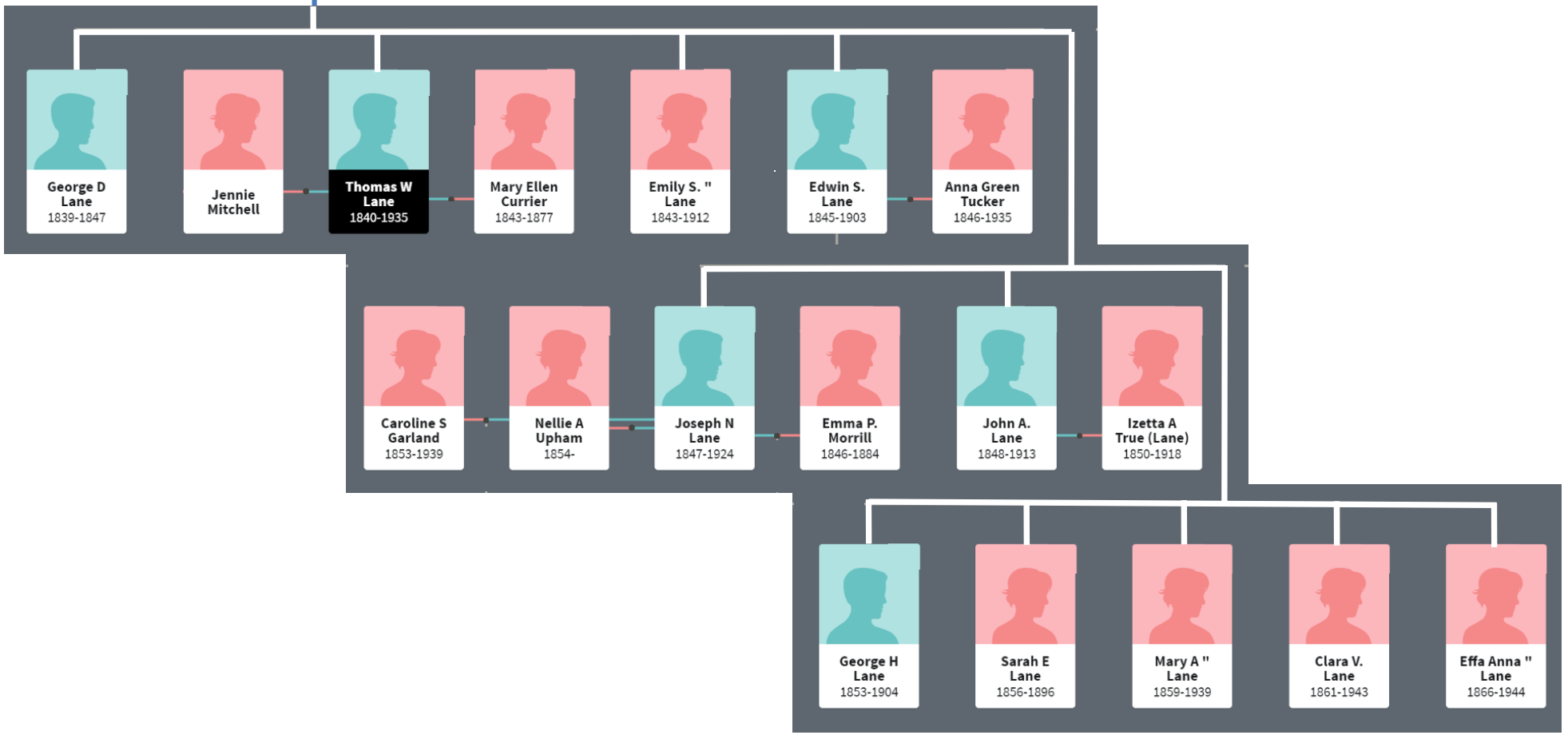
Thomas went briefly to Merrimac in 1861 as a blacksmith, almost certainly in carriage work, but soon came to Salisbury. There he met Mary Ellen Currier (1843-1877), daughter of farmer, Richard Currier, and descended from old Salisbury families of Currier, Hoyt, Morrill, & Merrill. They married in 1864, the following year moving to Lynn where their first son was born and where Thomas worked at blacksmithing. Mary's younger brother, Eben Morrill Currier (1848-1920), not being inclined toward farming, accompanied them to Lynn, learning blacksmithing under Thomas and marrying there in 1868.

Meanwhile, Thomas's next two younger brothers had come to Salisbury when Thomas was living there, where Joseph Nelson Lane (1847-1924) married Emma P. Morrill (1846-1884) in 1866, and Edwin Stacy Lane (1845-1903) married Anna Green Tucker (1846-1935) in 1867. There was clearly considerable longevity among the families, Thomas himself living to age 94.

While it is uncertain exactly what their blacksmithing business was, Thomas Lane and Eben Currier were successful in Lynn, following a common trend among the Lane siblings. Upon returning to Salisbury in 1868, after Eben married in Lynn, Thomas and Eben both immediately purchased Salisbury homes for their young families, Thomas's having a blacksmith shop in back. Lane's house still stands on Elm Street, opposite Chestnut Street. Both then went to work at the Chestnut Street factory of the town's carriage business founder, Jacob. R. Huntington.

Thomas W. Lane Family

These are believed to be Thomas Lane (father of the carriage maker of that name) and wife, Emily *Walton* Lane.



The Lane Family in Amesbury - 1870

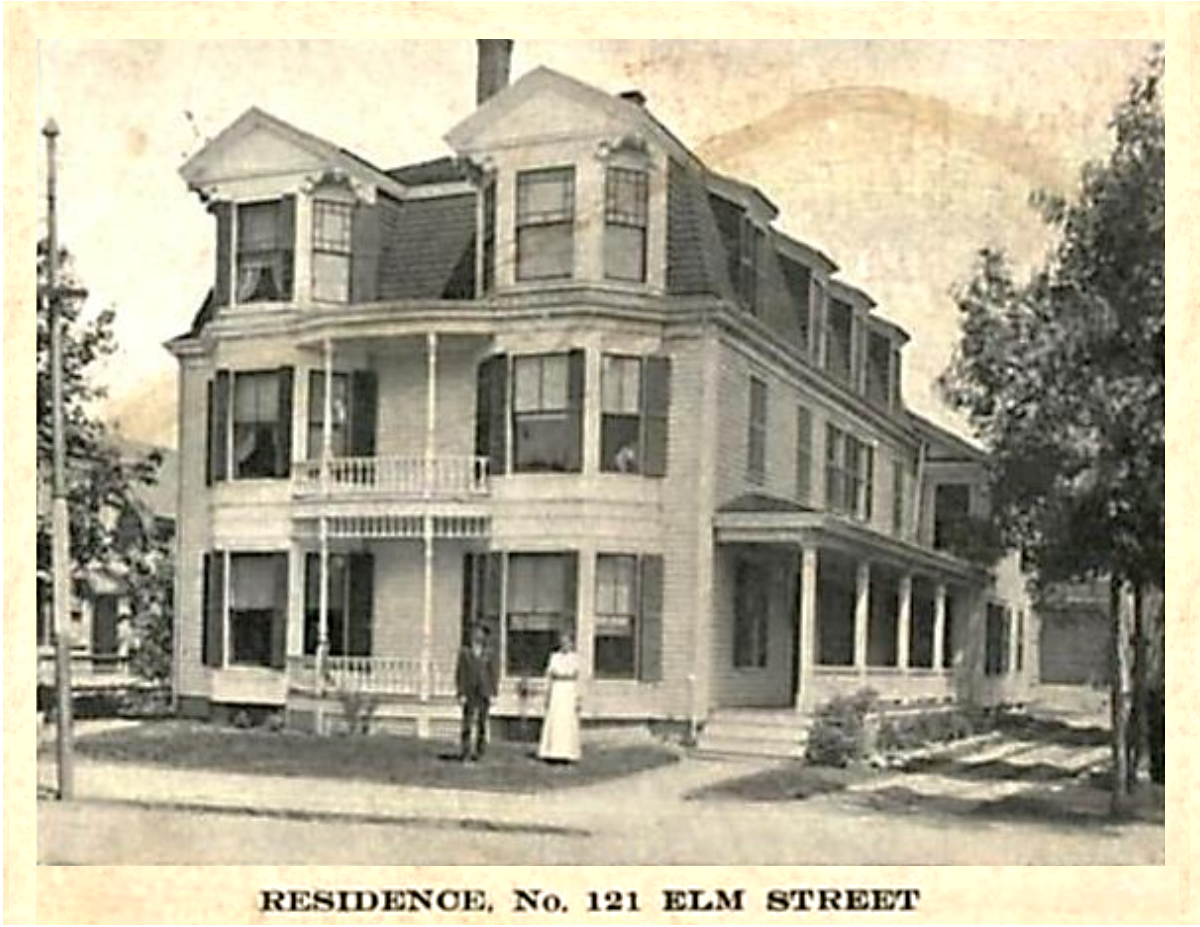
As Thomas Lane and Eben Currier were returning to Salisbury in 1868, Thomas's two brothers were establishing themselves as carriage makers there. Edwin S. Lane had land in the area of Elm and Oak Streets, just beyond a group of Elm Street homes belonging to members of the Collins family, now recalled in Collins St. and Collins Avenue. Edwin had built a carriage shop at the corner of Elm and Oak Streets where the laundromat now stands, with his house was on the opposite corner. Meanwhile, Joseph N. Lane had settled on Thompson Street, behind the Methodist church that then stood on Pond Street, up from today's Vermette's Market. He had a home near the Powow River, and a carriage shop at the corner of Thompson and Cameron Way, the latter then part of Orchard Street. A growing family presence thus offered support and familiarity.

Of note were the large real estate values ascribed to the group in the 1870 U. S. Census.

Thomas W. Lane	$5000
Edwin S. Lane	$4000
Joseph N. Lane	$6000

In 1874 Thomas went out on his own in the carriage business in a small rented shop on the south side of Elm Street, rounding the curve between Railroad Ave. and Rich's Court, at what is now an empty wooded lot.

Thomas W. Lane house, ca. 1900, still extant at that address



Period postcard

The Clark Family Area of Elm Street

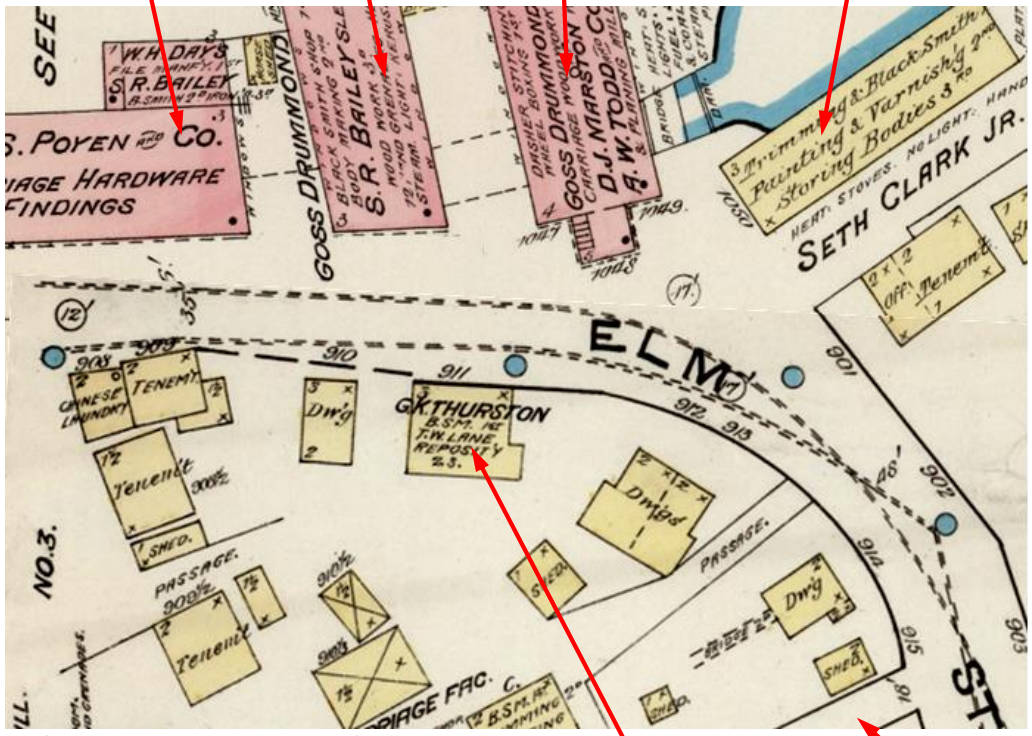
The Clark family had dammed Clark's pond, operating the town's largest tannery from 1823 to 1865, later the site of the Colchester Mill that was still there when Thomas Lane started his carriage business across the street. Seth Clark owned much of the land and buildings bounded by Railroad Ave., Elm St., and Rich's Court, including Lane's shop, where Seth Clark Jr. had started in business. Clark Jr. had moved across Elm to the side of Colchester Mill and Clark's Pond, including the building that now houses Drew's Tire shop. In the slow economy of the 1870s the Colchester Mill had taken in the carriage wheel manufacturing business of D. J. Marston, who had been burned out of his former location with William Biddle in 1876. By 1878, Marston was joined there by carriage maker R. F. Briggs, who was rapidly expanding. The Mill, which included the Elm St. frontage over to Clark Street, was sold in 1882 to a group of carriage people wanting develop the property for the benefit of the carriage business[1]. They built the adjacent building in 1882 to be leased as the first Amesbury home of sleigh maker, Samuel R. Bailey, and then the 1884 building at the corner of Clark St. as a new location of John S. Poyen, Merrimac dealer in carriage hardware. With proximity to the railroad, the Elm St. area from Clark St. to Chestnut St. was becoming a major carriage making community.

77 Elm St. Corner of Clark & Elm 1884

79 Elm St 1882

Former Colchester Mill 1866

Seth Clark Jr. Carriage Co. – now Drew's Tire shop



Sanborn Insurance map, 1885, sheet 7

T. W. Lane's 1874 carriage shop

Rich's Court

1) W. E. Biddle, J. R. Huntington, S. R. Sibley, Jos. N. Clark, & Geo. W. Morrill, *History of Amesbury Carriage Makers*, Nov. 1882 Hub articles, Royal Feltner

Joseph Nelson Lane Carriage Making

In 1870 Joseph, who seemingly went by J. Nelson, was a Salisbury carriage maker having 13 employees making 60 carriages per year[1], with a home and shop on Thompson Street. The ca. 1875 carriage body making business of John Francis was added to J. Nelson's property under an unknown arrangement, Francis having learned body making years earlier and then working for J. R. Huntington, where he must have known Thomas Lane.

Joseph's implied labor was a heavy 60 man-days per carriage, with a correspondingly high $200 average sell price. The Francis shop burned completely in 1880, but was rapidly rebuilt as a steam powered factory under the partnership of Francis and William B. Smith. It can be seen here that Joseph Lane still maintained shop space there in 1885, but with little likelihood of much activity.

J. Nelson Lane ca. 1870

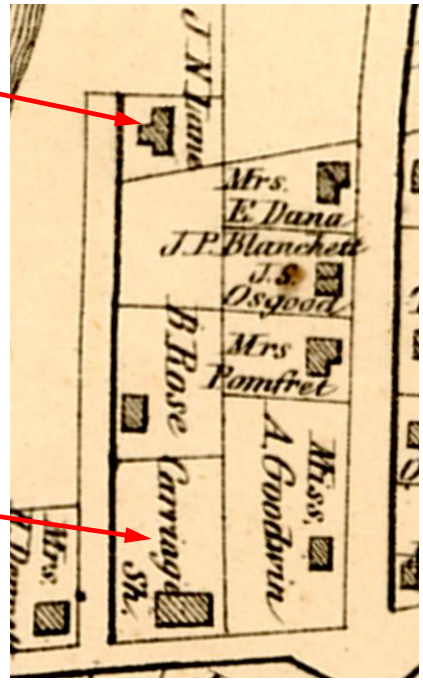
Joseph's numbers could appear inflated if carriages were not the only activity. With his background, he may have been doing blacksmithing for other makers, a common farmout service. Either way, he was likely no longer operating in 1885. At that time, he was listed as managing the Elm Street shop of his brother, Edwin S. Lane, which was a larger and more robust business.

1) 1870 U. S. Census

J. N. Lane house

1872

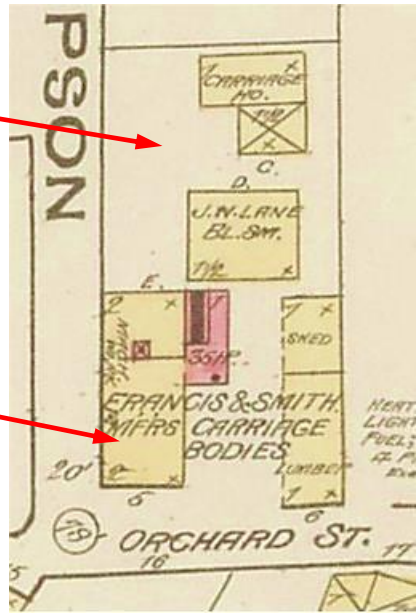
J. N. Lane carriage shop



J. N. Lane shops

1885

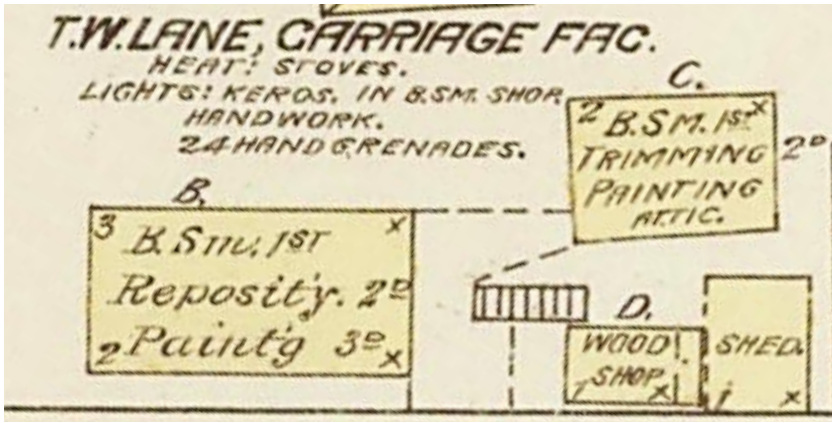
Francis & Smith shops



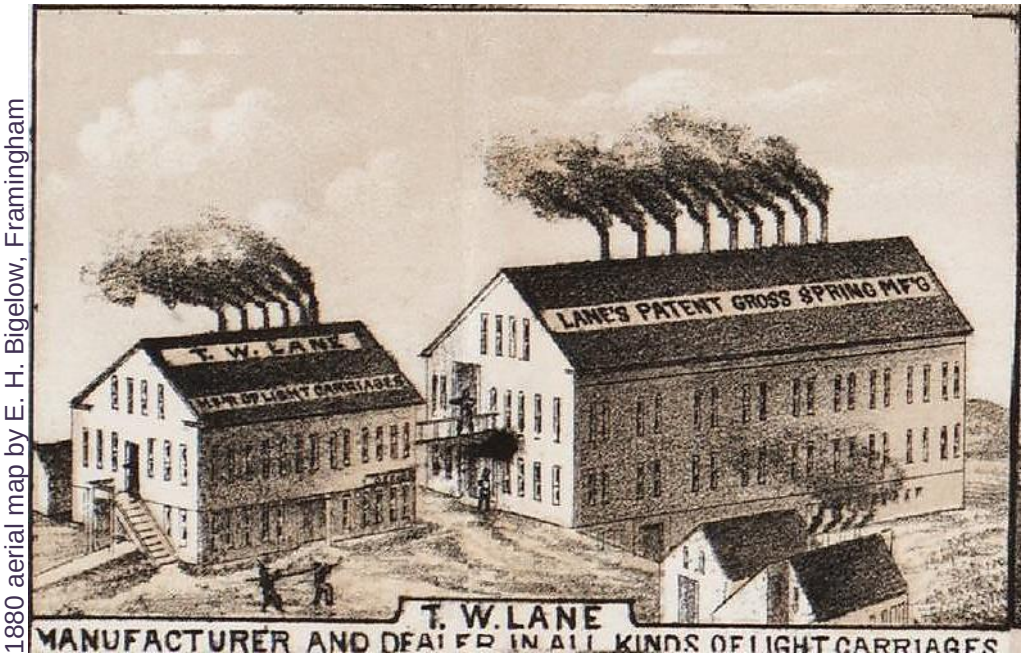
The 1870s & Thomas W. Lane's First Two Shops

Meanwhile, Thomas Lane's timing of opening a new shop in 1874 was risky, for the country had just entered what would become an extended recession that closed Amesbury textile mills from mid-1876 to mid-1880. Fortunately, local carriage makers weathered the period on the pocketbooks of carriage buyers, who were of a financially robust class. Lane, the blacksmith, produced springs and related forged ironwork for undercarriages, supplying them to the trade as well as applying them to his own carriages. This kept him afloat until conditions began improving late in the decade.

Lane's wife died in 1877 just as his fortunes were rising. Under circumstances not readily apparent now, he remarried six months later (to the day) to Sarah Jennie Mitchell. He moved to a second and larger new shop at about that time, located at the top of Rich's Court (seemingly also a new Clark property that was leased to various makers over ensuing years), Just a short walk from his previous space, Lane retained room at the old location as a repository for storing and displaying carriages while sharing the building with an apparent associate blacksmith, G. K. Thurston. Shown below, the two new main buildings had only blacksmithing, upholstery trimming, and painting, while the small woodworking shop could have done little carriage making beyond that needed for Lane's undercarriage work.



Sanborn Map & Publishing Co., New York, July 1885, pg. 7



1880 aerial map by E. H. Bigelow, Framingham

Edwin Stacy Lane Carriage Making

Edwin Lane started carriage manufacturing[1] in about 1868-9, while the 1884 map on the following page shows his land holdings around Oak Street. Several of those are in conjunction with an Edmund Morrill, who may have been an influential connection as an established old Salisbury family. By 1885, Edwin's carriage shop appeared under the name of J. N. Lane, and 1888 manufacturers' data likewise lists J. Nelson as a carriage maker rather than Edwin. For years Edwin maintained a relatively small shop steadily producing about 200 carriages per year, for which he seemed to make more of the carriage than did his brother, Thomas. Under J. N. Lane, the business migrated toward T. W. Lane's business model of low-cost manufacture and did not exhibit at the 1893 Columbian Exposition. The 1900 Census lists Edwin's occupation as that of a "Capitalist", indicative of his varied interests. The carriage shop may have been mainly a convenient cash generator that helped support his general business interests. Although he died in his house in 1903 his carriage shop was still operating under J. N. Lane as late as 1909.

1) Stated as such in the 1870 U. S. Census

Edwin Stacy Lane, age 21

1879 advertisement

E. S. LANE,

MANUFACTURER OF AND DEALER IN

Light Carriages of every Description,

ELM STREET, SALISBURY MILLS, MASS. P. O. Address,—AMESBURY, MASS.

Good Stock used in every Department.

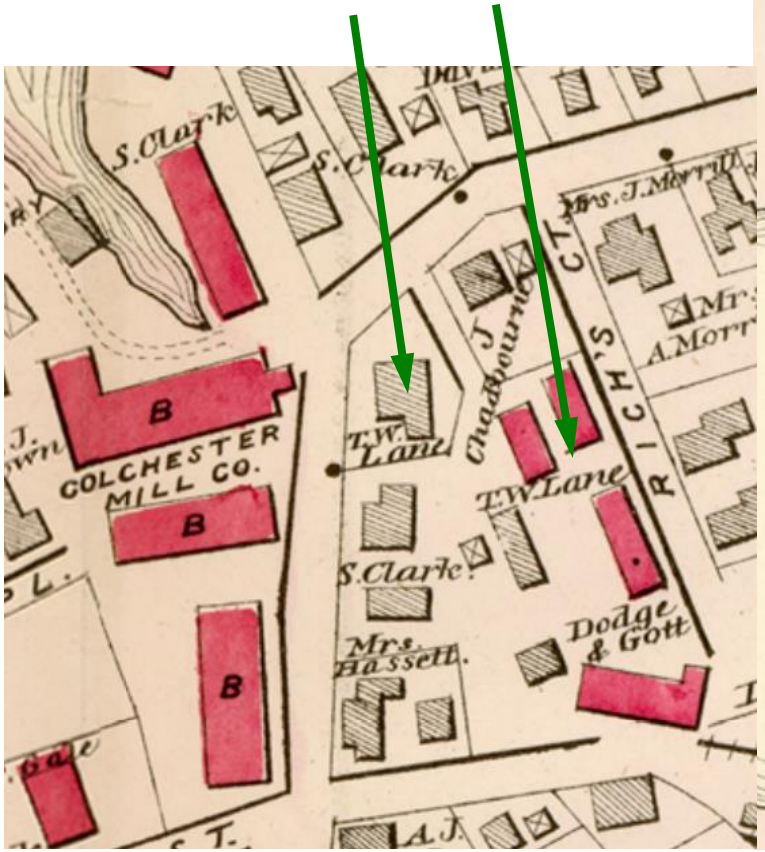
ALL THE STYLES REPRESENTED BY CUTS IN THIS BOOK ARE MADE AT MY FACTORY.

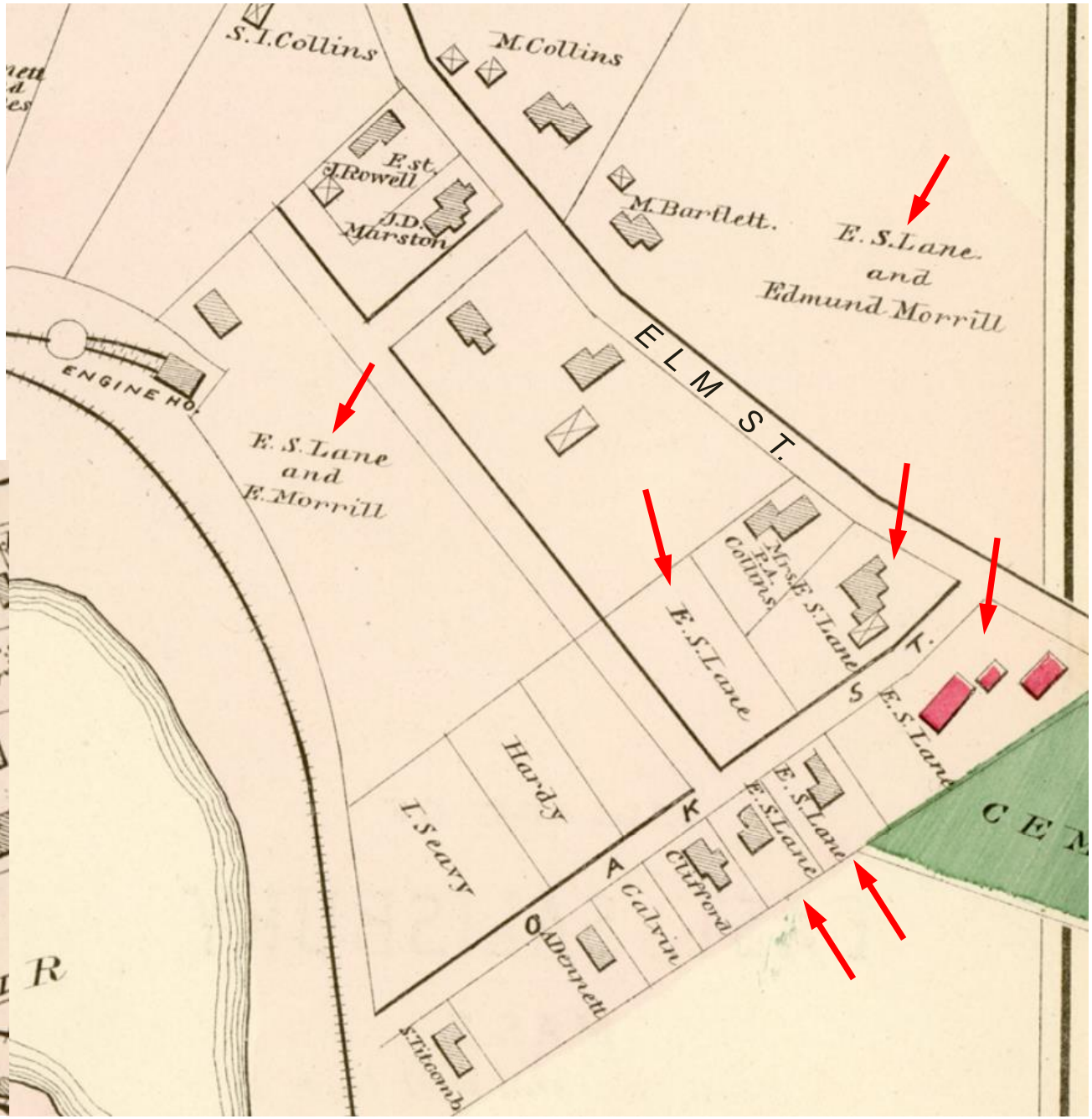
GOOD WORK AND LOW PRICES.

SEND FOR PRICE LIST.

T. W. Lane & E. S. Lane Physical Locations - 1884

This 1884 map shows T. W. Lane in both locations by the Colchester Mill complex (below) while E. S. Lane has numerous land holdings around Elm & Oak Streets, including his home and shop at the intersection. Edwin had also sold wheel maker, J. D. Marston, the land for his house on Elm Street.





Thomas W. Lane and his Patent Cross Spring Undercarriage

Thomas Lane followed a financially modest plan of making only the undercarriage that used his springs, selling them to the trade while purchasing wheels and bodies from local makers to complete his own carriages. His carriage-making plan was to not make the carriage, which was not a new concept. Makers already purchased wheels, which had many duplicate parts that lent themselves to mechanized factories having steam power. (Most Amesbury carriage shops, including Lane's, had no power.) There was also a small but growing number of sources for carriage bodies in unfinished condition. Circumstances suggest that Lane and John Francis left the Huntington factory roughly together, Francis starting body making on Thomas's brother's lot and perhaps supplying Thomas's carriage venture as mutually beneficial enterprises. The method facilitated a business approach of being more of a carriage assembler and finisher than an actual manufacturer of the basic structure.

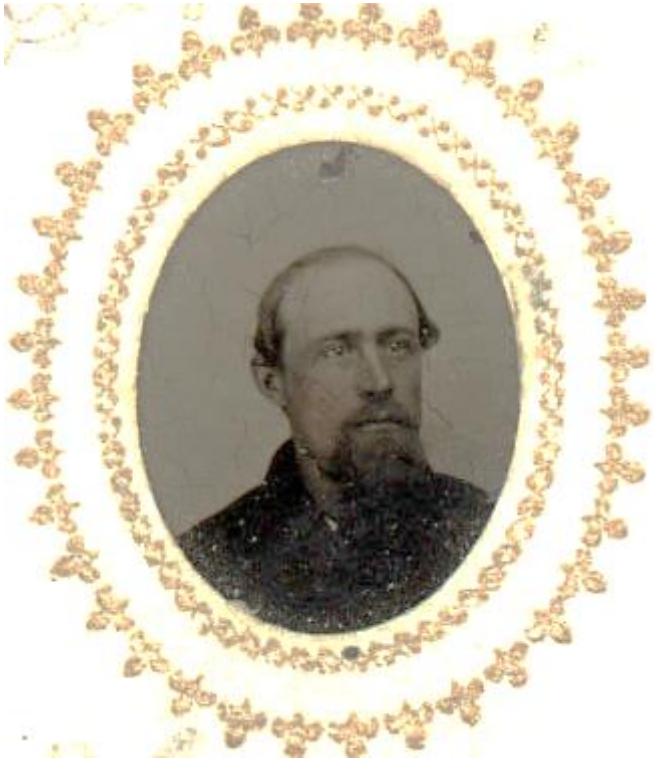
By the late 1870s Lane had developed an undercarriage having two long curved springs made from simple straight bar stock crossing each other in an "X" shape, held by a rectangular frame. The sides of the frame were wood beams holding the rear axle at the back, and a bar at the front, or block as he called it, that carried the swiveling connection to the fifth-wheel and front axle.

On July 29, 1879 Lane was issued a patent for his design (patent on later page) that was relatively uncomplicated while likely providing a system that accommodated a useful range of body styles and sizes. His approach of being a carriage assembler was shared to varying degrees by other makers, presenting a cost-efficient means of doing business. The approach was elevating Lane as a significant producer of low-cost carriages.

The Lane Family Gathers in Amesbury

Thomas Lane's father died in 1873, just before Thomas started in business on his own. By 1880 his mother, Emily, was living in Amesbury/Salisbury in her own busy household at the corner of Green and Congress Streets (on the back side of the same block as Thomas) with youngest son, Howard, and three daughters, Addie, Effie, and Clara. Clara was married to a Ferdinand Titcomb and they had a baby daughter. Of the two men, Howard was a carriage blacksmith and Ferdinand was a carriage trimmer. There is a chance that they worked for one of the Lane brothers, but that is not established. Living nearby was Thomas's oldest sister, Emma Susan, then married to Mr. Alfred Scott Fitz. At that same time, the fifth brother, John A. Lane, was living at the corner of Elm and Morrill Streets, working as a carriage body maker in a building at the rear. That establishment survived the Carriage Hill fire of 1888, and John was still making carriage bodies in 1913.

Howard W. Lane ca. 1883



Cover of T. W. Lane's catalogue ca. 1910
Light carriages were open topped vehicles, perhaps with folding leather tops, rather than having fully enclosed bodies.

Thomas W. Lane
Souvenir issue of the Amesbury Daily News, spring opening of 1891

Above, T. W Lane's cane, Bartlett Museum, Amesbury, having his logo signature

Below, 1897 YMCA Women's Auxiliary Cookbook, both courtesy of Mrs. Dorothy Williamson

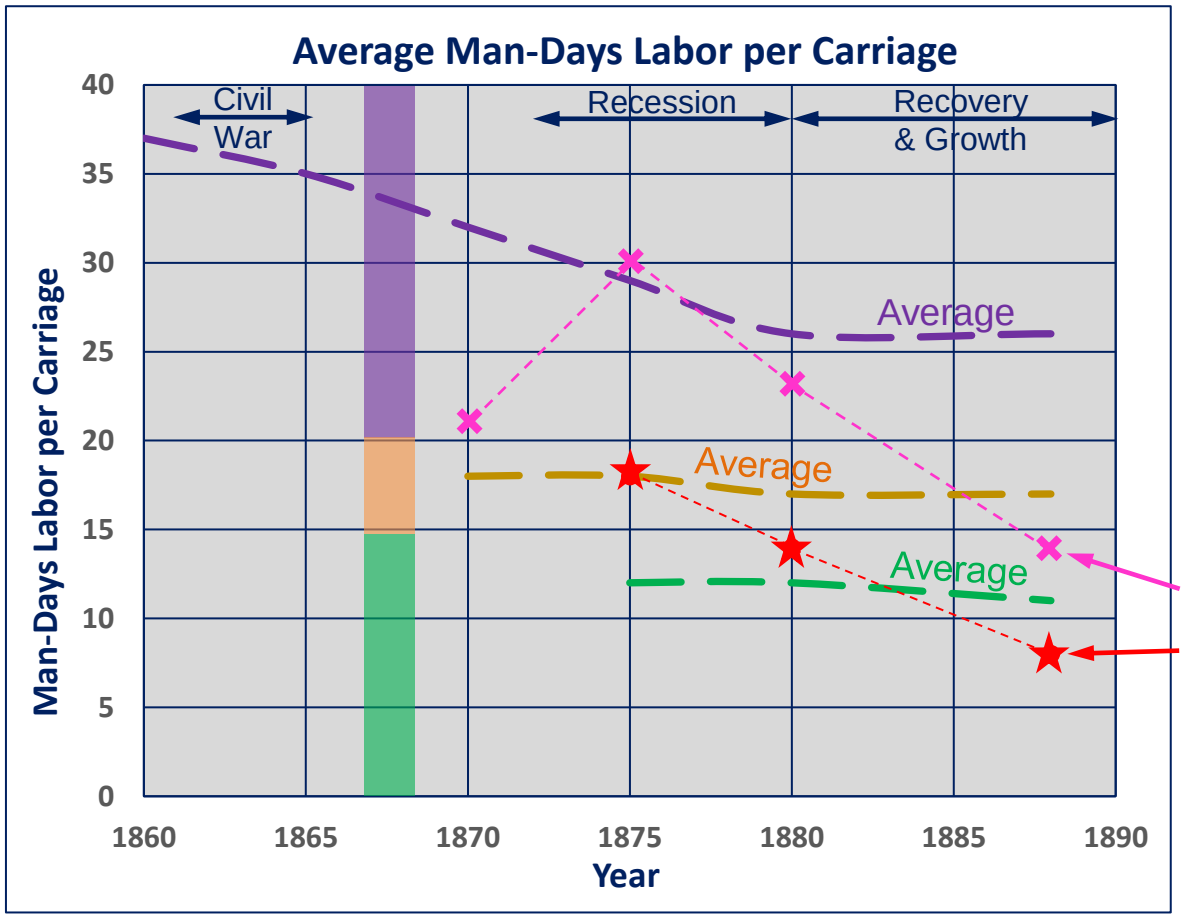
The Trade in Carriage Sub-Assemblies

Below is a ca. 1879 advert for William Biddle (prior to his 1882 merger with William Smart) who had a steam powered factory on Water Street. His top billing here is for “Wheels, Bodies & Gears”, the last being undercarriages. Besides “every style” of finished carriages he offers varied unfinished light vehicles “ready to paint and trim (upholster)”. By 1877 Richard F. Briggs had offered a similarly large variety of the same materials, operating from both his own powered factory on Cedar St. and rented powered space in the Colchester Mill. The steam-powered Locke & Jewell factory on Mechanics Row did the same, among the earliest to do so. Meanwhile, Francis & Smith made carriage bodies in their powered factory on Thompson Street. By 1881 Cameron & Co. made bodies & gears in space they had in the powered F. D. Parry factory on Friend Street, then moved to the Colchester Mill in 1882

By mid-1870s, unfinished sub-assemblies and complete carriages were both available in the Amesbury trade, made in factories having steam power (waterpower rights were all owned by the textile mills). Powered factories simply had the capacity to do more work, faster, which they applied to heavy carpentry tasks of rough sawing, planing, and shaping for large and structural wood parts. This capability then flowed out to carriage makers and assemblers, who could style their products and price points around the large range of sub-assemblies available from suppliers, who all strived for variety.

Basic Labor Input to Complete a Carriage

The chart below describes the direct labor content for the final-stage carriage maker to finish a carriage, across the years spanning major Amesbury vehicle production. Shown are three categories of labor content, from above 20 Man-Days labor per carriage to below 15 Man-Days. Heavy dashed lines show average labor values for each category. Only three Amesbury makers had broken below 20 Man-Days by 1870, almost certainly by purchasing major sub-assemblies. Several Merrimac makers were then selling carriage bodies in the $10-$15 price range, while Amesbury then had the new (1867) Locke & Jewell wheel factory and perhaps some body makers. By 1875, Thomas Lane, shown by three red stars, was operating right on the average of this new middle tier of labor content, and two Amesbury makers had just broken below 15 Man-Days labor. Pursuing a low-cost approach, Lane joined the lowest tier by 1880, and by 1888 was Amesbury's lowest labor content maker. At 600 carriages per year he was the largest producer in this lowest tier, with sell-prices just slightly above the bottom. Lowest labor tier makers had smaller physical shops and fewer employees compared to the higher tiers. However, they maintained a pace that garnered the highest income per employee and the highest pay. At around $4 per day, Lane's 16-20 carriage workers made about the highest wages in town.

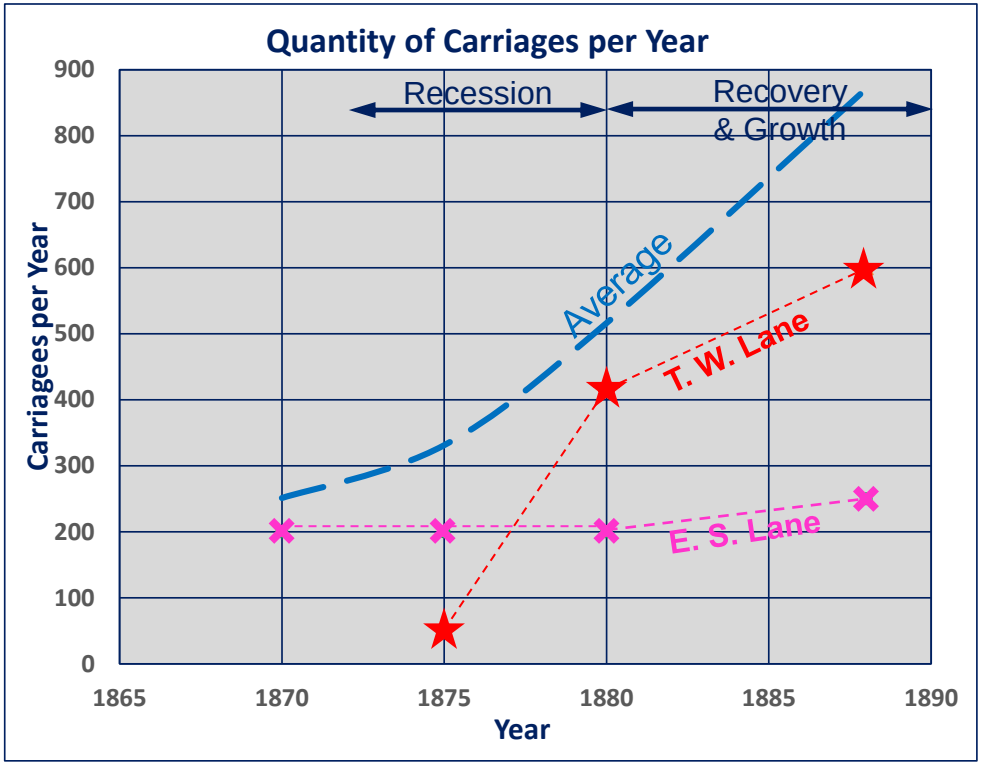


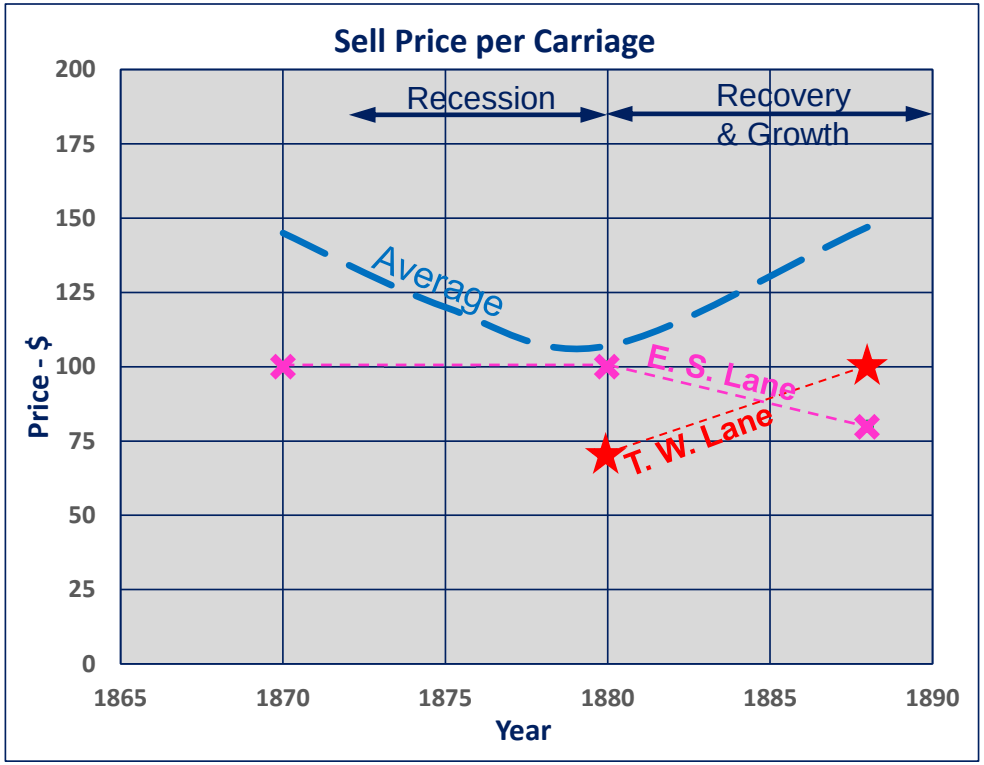
Note: Because the three major tend lines are averages, they are relatively stable status indictors. Points for the two Lanes may have more possible error, but the general trends strongly support an unmistakable character of reducing labor content.

T. W. Lane & E. S. Lane Production Volume and Sell Price

In charts below, the heavy blue dashed lines represents average values for all Amesbury carriage makers, with Thomas's and Edwin's data shown separately. Both appear to strive for low-cost vehicles that will enjoy broad dependable demand. Thomas clearly works to build large volume business for a relatively small shop, for he did not occupy his final and more substantial factory until 1890. Edwin, conversely, seems to continue along at relatively constant volume and price, until J. N. Lane pushes for more productivity and more attractive prices later in the 1880s.

Town production can be seen rising rapidly, recognizing that figures shown are averages and that some makers are producing over 1000 carriages per year. 1880s recovery is supporting production growth. The recession drives down prices during the 1870s, which then rebound during 1880s prosperity. The latter allows Thomas to raise his prices as well as expand his output. (Unfortunately, pricing data is not available for 1875). Thomas generally follows the average trends, as permitted by the economic climate.





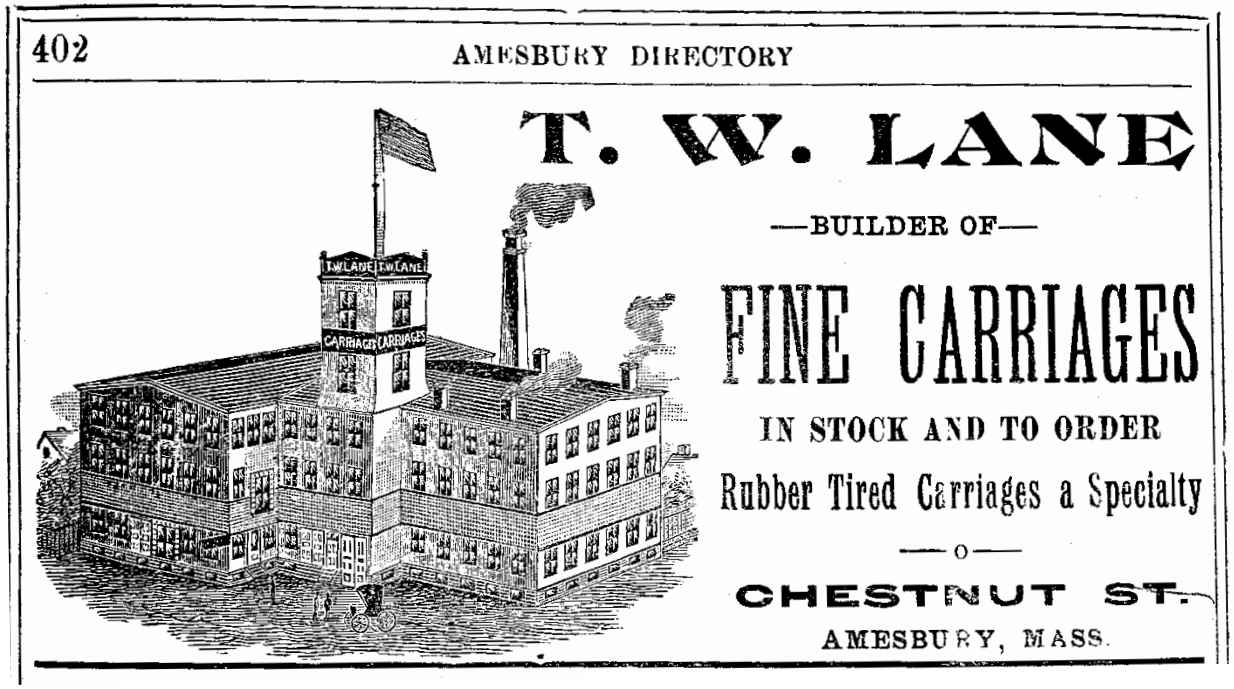
Good Times Return & Lane's Final Factory on Chestnut Street

Pressure of the 1870s recession had prompted lower labor tier methods for carriage manufacture, keeping Amesbury competitive with low cost vehicles. 1880 brought recovery and growth, so that during the early 1880s Thomas Lane built a sizable two-story carriage repository behind his home to accommodate his expanding trade. Bottom labor tier population then shrank, swelling middle and upper tiers with higher labor, higher cost carriages, including several makers of exclusive grades. Carriage Hill was expanding with new businesses and factories, interrupted only by the April 1888 fire that wiped out much of that. Lane's factory on Rich's Court was not affected but there was concern that the fire might reach his residence.

In 1890 Lane opened his final factory[1], with steam heat (but no power), directly across from where the Biddle & Smart building now resides at 6 Chestnut Street. In a telling detail, this facility had blacksmith, painting, and upholstery trimming departments, but no woodworking shop, for by that time it was common for makers to purchase complete unfinished carriages. As seen below, the tower was an elevator shaft and one wing had smaller chimneys from blacksmithing forges. The business continued here for about a quarter century, never entering auto body manufacturing that became the second coming for many carriage makers.

As carriages moved upscale during the 1880s Lane remained as the dominant player in the lower tier. With continued success in this humble market, he did not join Amesbury carriage makers in their exhibit of fine vehicles at the 1893 Columbian Exposition in Chicago. That same year experienced another economic downturn with four years of slow times that saw closings of carriage makers while Lane continued with the security of low-cost carriage making.

1) The Villager newspaper, 10-23-1890, pg. 1



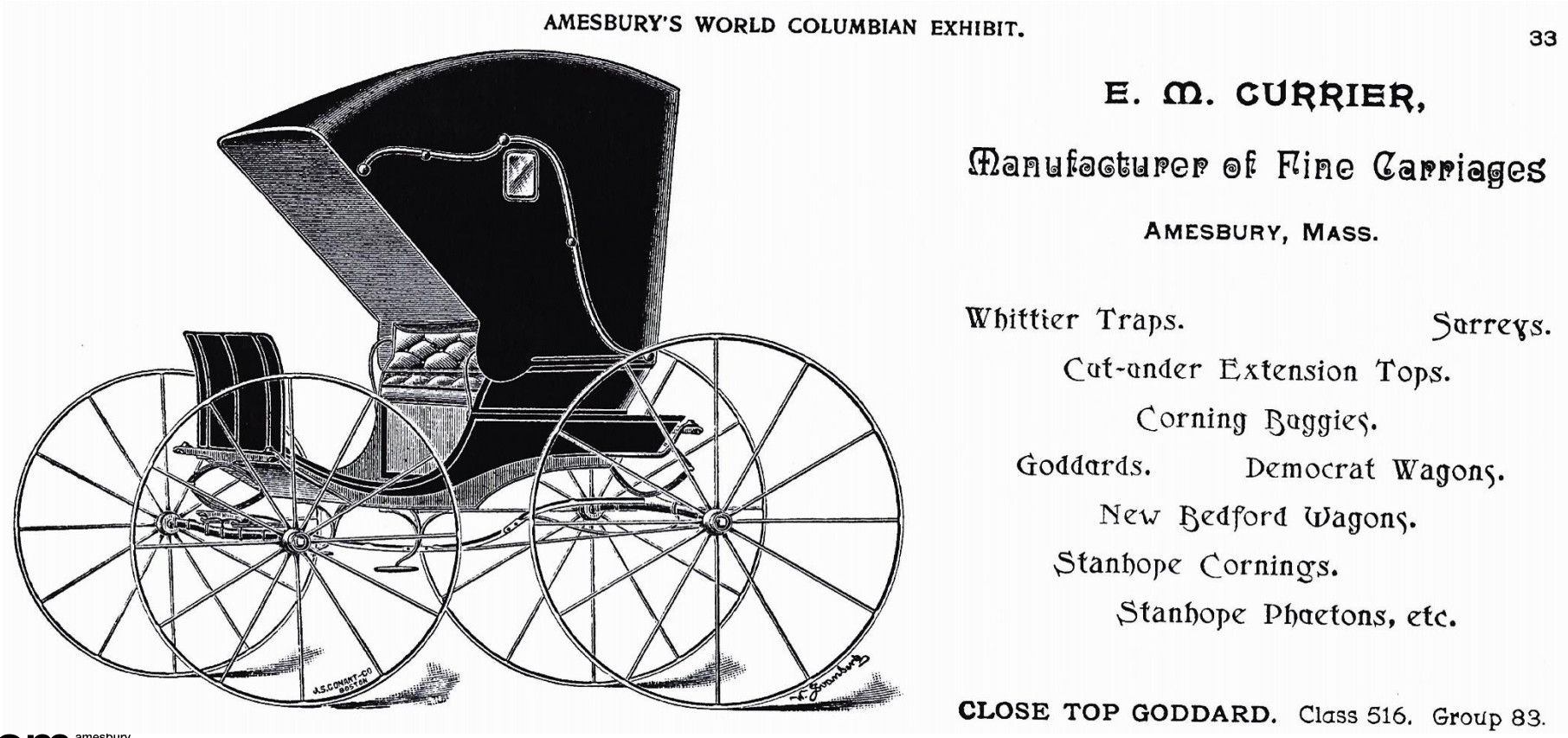
T. W. Lane's Factory on Chestnut Street – ca. 1890s

The front of an unusual double-sided postcard,
the opposite side having an image of his house, seen on page 5.

Eben M. Currier Carriage Company

In about 1884, T. W. Lane's brother-in-law, Eben Morrill Currier, started as a lower labor tier maker in a small shop behind 13 Whitehall Road, finishing nicer and higher priced carriages that sold at the highest prices in that tier. In 1888-9 he built a still extant factory at 11 Oakland St. where he conducted a more traditional business. His partner there was J. Woodbury Currier, who dropped out after about a year, Eben then continuing on alone. Seen below is Currier's advert in the 1893 exhibition catalogue of Amesbury makers at the 1893 Columbian Exposition in Chicago. The "close top" refers to the folding top being covered on the sides as well as on top, the latter alone being more common. Most common was no top at all, but tops could be added as after-market improvements.

Currier's building was acquired by the Shiels Carriage company in about 1896, and was later purchased in 1916 by the Frank Hoyt peanut products business.



AMESBURY'S WORLD COLUMBIAN EXHIBIT. 33

E. M. CURRIER,

Manufacturer of Fine Carriages

AMESBURY, MASS.

Whittier Traps. Surreys.

Cut-under Extension Tops.

Corning Baggies.

Goddards. Democrat Wagons.

New Bedford Wagons.

Stanhope Cornings.

Stanhope Phaetons, etc.

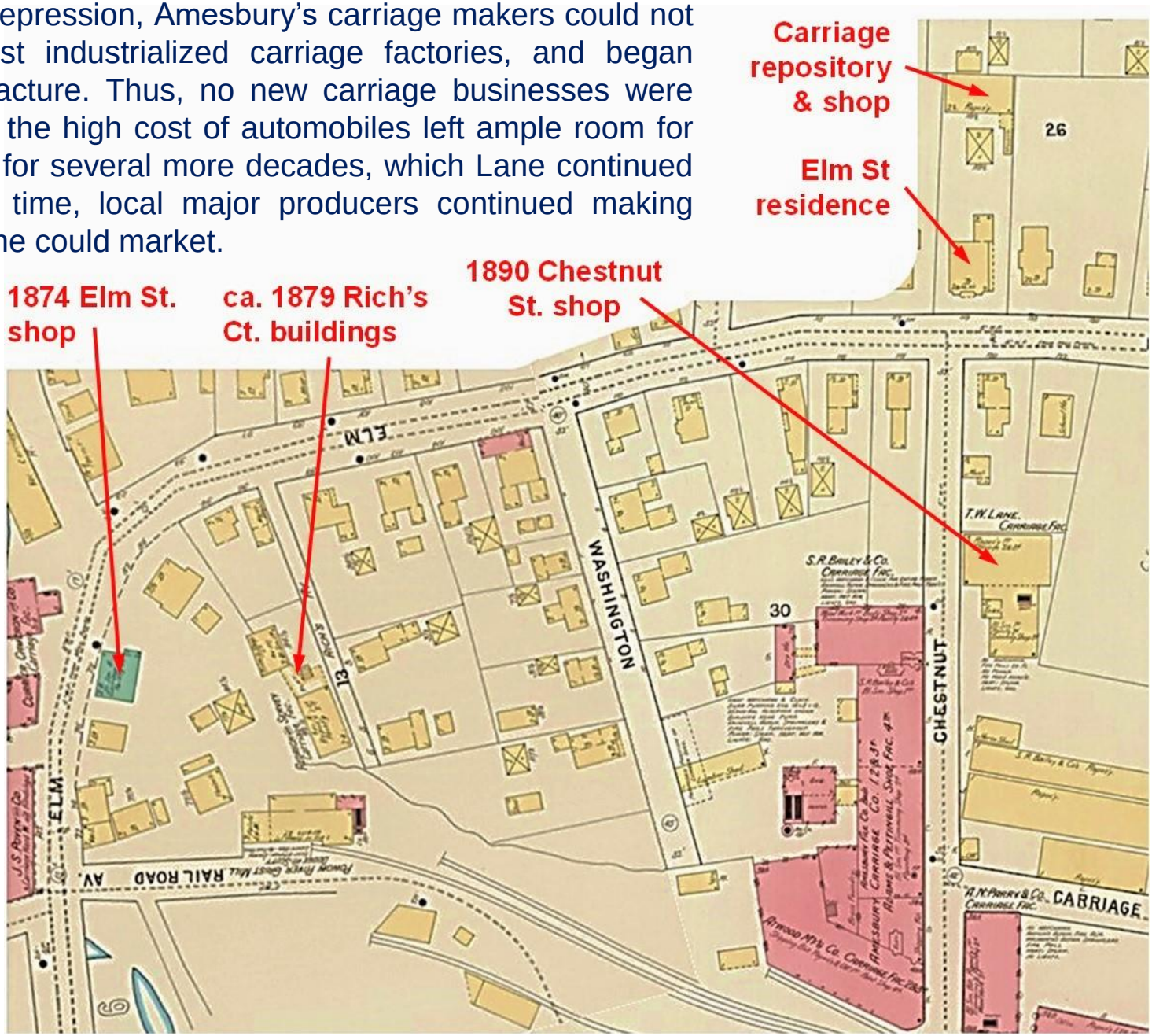
CLOSE TOP GODDARD. Class 516. Group 83.

T. W. Lane's Locations & 20th Century Business

Recovering from the 1890s depression, Amesbury's carriage makers could not compete with large mid-west industrialized carriage factories, and began shifting to auto body manufacture. Thus, no new carriage businesses were formed after 1905. However, the high cost of automobiles left ample room for the carriage industry to exist for several more decades, which Lane continued to serve. For much of that time, local major producers continued making carriages assemblies that Lane could market.

Thomas Lane's Elm St. realm extended from Railroad Ave. to Chestnut St., with brother John at the corner of Morrell St. and Edwin out at Oak Street. Other family members were in the same block as Thomas.

At right is an 1894 map showing T. W. Lane's various shop and home locations, the latter having a repository & blacksmith shop in back. Lane's shop was across Chestnut St. from the large brick Babcock building, the back of which can be seen on the next page.



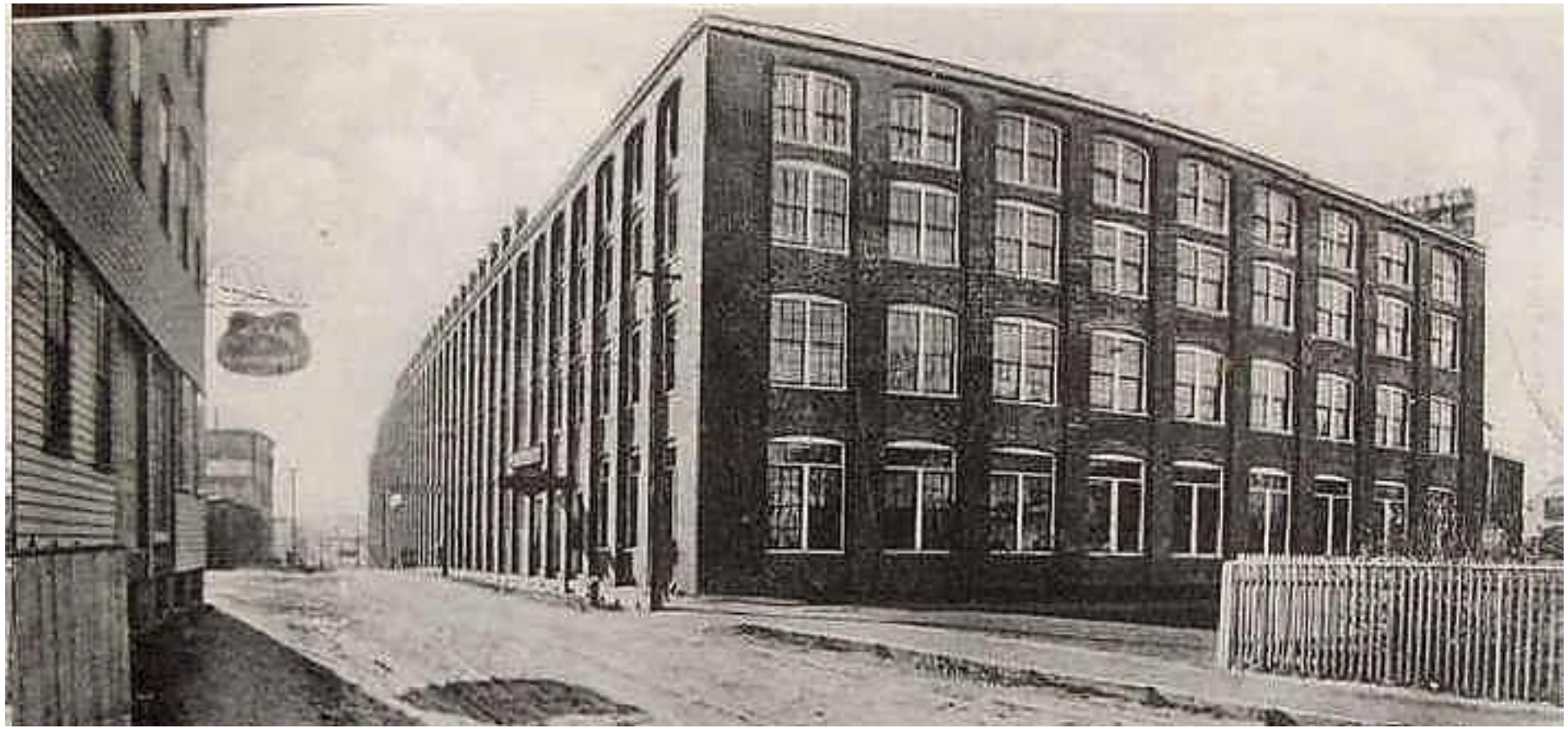
Sanborn Map & Publishing Co., New York, Aug.1894 pgs. 4 & 5

Final Years

Joseph N. Lane continued Edwin Lane's carriage business after his 1903 death. One of Edwin's last major transactions was to sell his large lot between the tracks and Oakland St. to Grey & Davis, who built a substantial factory there making automobile lighting and electrical systems, including electric starters.

Meanwhile, Thomas Lane continued prospering as automobile body manufacture became a thriving industry after 1900. He thus purchased carriage inventories of several closing shops, including Harlan P. Wells in 1909, Folger & Drummond in 1911, and Clark Carriage Company in 1917. The Chestnut St. building was sold to Biddle & Smart in 1925 (then owning the Babcock building) after which carriage work continued at Lane's Elm St. repository. The firm reportedly sold the last Amesbury carriage in 1927.

Far left, T. W. Lane's Chestnut St. factory, ca. 1912, opposite the
Babcock building, then owned by the S. R. Bailey Co. making electric automobiles



1886 T. W. Lane Description

INDUSTRIES OF MASSACHUSETTS.

HISTORICAL AND DESCRIPTIVE REVIEW

OF

LYNN, LOWELL, LAWRENCE,

HAVERHILL, SALEM, BEVERLY, PEABODY,

DANVERS, GLOUCESTER,

NEWBURYPORT, and AMESBURY,

AND THEIR LEADING

MANUFACTURERS AND MERCHANTS.

ILLUSTRATED.

1886.
INTERNATIONAL PUBLISHING CO., PUBLISHERS,
102 CHAMBERS STREET, NEW YORK,
Boston, and Chicago.

T. W. Lane, Manufacturer of Patent Carriage Springs, Carriages, etc.—Engaged in the double capacity of manufacturing springs and shackles and all descriptions of light carriages is Mr. T. W. Lane, who founded his business in 1874. His factory comprises four extensive buildings, and a large wareroom for the exhibition and sale of his products. Mr. Lane is a practical mechanic and carriage builder, and the inventor of Lane's patent spring, and in the making of his carriages he has used these springs for seven years, and find they ride easier and stand better than any other kind. They are the very best. The springs on regular buggies weigh thirty-two pounds, make a lighter buggy than elliptic springs, and need no hanging irons. A special feature is also made of patent cross springs for democratic wagons. The house manufactures finished carriages in at least three different grades. Top and open buggies, cornings, pianos, concave and all good styles, Concord wagons, democrats, medium and light weight, phaetons, two-seat pianos, side-bar surries, etc. The factories are thorough and complete in the efficiency of their equipments, and a staff of twenty workmen are employed. The output of the establishment is about five hundred carriages a year, and a stock of about sixty are constantly kept on hand. The trade of the house extends to all parts of the country, and Mr. Lane, who is a native of New Hampshire, is one of the most respected men in the trade.

UNITED STATES PATENT OFFICE.

THOMAS W. LANE, OF AMESBURY, MASSACHUSETTS.

IMPROVEMENT IN VEHICLE-SPRINGS.

Specification forming part of Letters Patent No. **218,034**, dated July 29, 1879; application filed June 14, 1879.

To all whom it may concern:

Be it known that I, THOMAS W. LANE, of Amesbury, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Vehicle-Springs; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a plan of my vehicle-spring, and Fig. 2 is a side elevation view of the same.

My invention relates to springs for vehicles; and it consists in two springs, of one or more leaves each, crossing each other in the center, and connected by shackles or otherwise at their ends, with the front head-block and rear axle, and a depressed central perch, as will be hereinafter more fully set forth.

The annexed drawings, to which reference is made, fully illustrate my invention.

A represents the front head-block, and B the rear axle, of a vehicle, which are shown as connected by means of the side bars, C C; but my invention is equally applicable to vehicles having no side bars. D represents the perch connecting the head-block A and axle B in the center. This perch is depressed, as shown, or, in other words, its ends are curved upward, and then turned outward and fastened to the head-block and axle, whereby the main portion of the perch will lie in a plane below that of the head-block and axle, giving ample room for the sagging of the springs.

F F represent the springs, which may be made of one or more leaves, as desired, and cross each other in the center, where they are fastened together by a bolt or rivet, *a*, or otherwise, the springs being in the form of a letter X. The ends of the springs F F are connected to the head-block A and axle B by shackles *b b*.

By this construction the springs are considerably longer than usual, which makes them ride easier, and the body of the vehicle is to be attached to cross-bars fastened on the springs, whereby the body will be directly over the center of the springs, where they are crossed and fastened together.

I claim—

In a vehicle, the springs F F, crossing each other at or near their centers, and having their ends connected by shackles to the front head-block and rear axle, in combination with said front head-block and rear axle, and the depressed perch connecting the same, as and for the purposes set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

THOMAS W. LANE.

Witnesses:
J. T. CLARKSON,
W. T. CLARKSON.

Fig. 1.

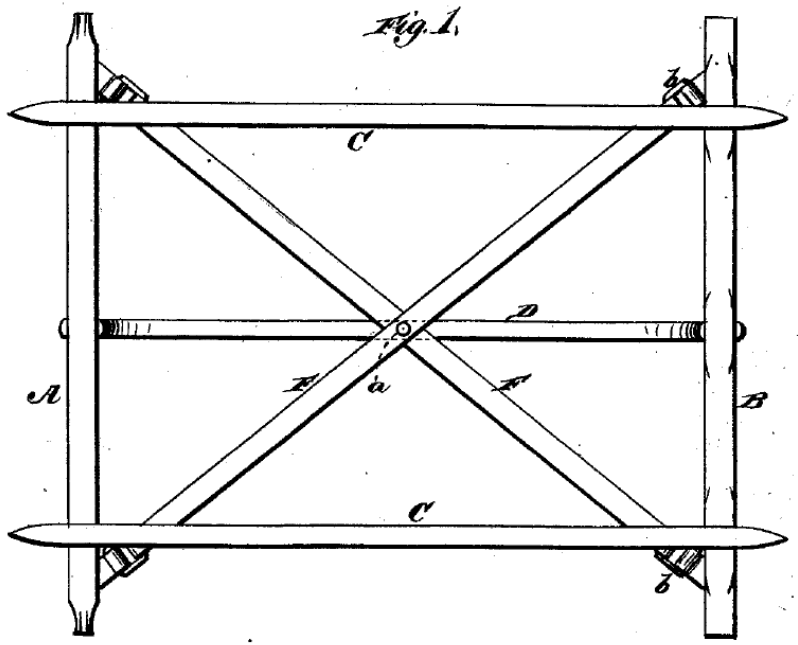
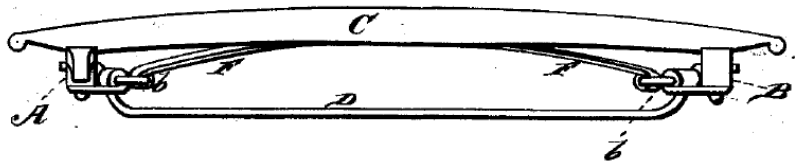


Fig. 2.



Thomas Lane Grave at Mt. Prospect Cemetery