

Complete Automobiles Made in Amesbury

Amesbury briefly considers automobile manufacture, ca. 1900

by

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Amesbury Moving into Automobiles

What follows is a scrapbook collection of period accounts plus later descriptions of complete automobiles made in Amesbury, which became a boutique supplier of high-end auto bodies during the early automotive era (1900-1930). That position derived from Amesbury's repute as a 19th century carriage center, being about the 5th most productive carriage town in America despite its small size.

Amesbury's carriage business had not been a heavy "smokestack" industry in either methods or magnitude. For instance, carriage makers were locally capitalized, whereas Amesbury's earlier industrial textile manufacture (all brick buildings along the Powow River were originally textile mills) rapidly became controlled by larger outside investors. In other words, the Powow River's industrial waterpower was priced beyond Amesbury's reach, while carriage making methods were matched to local financial resources. In contrast, some large industrialized carriage factories in the Midwest, such as Durant & Dort (founders of General Motors) and Studebaker, had annual production comparable to that of all Amesbury makers combined. In the overall scale of consumer manufacture, automotive technology, as with textiles, was destined to advance into industrial and economic realms not readily accessible to Amesbury.

However, in the years of Amesbury automobiles such companies could hope to operate on the small scale that thousands of American carriage makers had long practiced as modest-sized producers serving local and/or regional markets. Plans and methods were less grand than we standardly envision today. Automobile fames and structures could be fashioned by bolting or riveting commercially available angle iron other standard stock. Existing factories were sufficient to make small numbers of a scarce luxury item for which only a few visionaries had yet considered widespread production and distribution.

Amesbury Carriage Making Meets the Automotive Era

Traditional carriages comprised three major wooden sub-assemblies: bodies, wheels, and gears, the latter being undercarriages supporting bodies on steel-spring suspensions. In Amesbury, this reduced to making solely bodies during the automotive era. Early auto bodies were virtually carriage bodies. Even as they became more “automotive” in style bodies long remained wood structures, perhaps sheathed in aluminum or steel, and then eventually all-metal assemblies.

Carriages were of intentionally light-weight while autos were inherently heavier, having engines and drivetrains. Between their weight and higher speeds, autos suffered far higher impact loads from bumps, ruts, and rocks in dirt roads (rolling over these was why carriage wheels were so large in diameter). Such heavy-duty service drove automobiles to a strong metal chassis supporting its weight on correspondingly strong wheels and suspension. This was the primary automotive technology, under a body as an attractive passive shell and that was ergonomically convenient for driver and passengers. Core automotive technology departed from Amesbury’s woodworking past in its design requirements and production methods.

Below lists the few local examples of complete automobiles that were proposed or actually made in Amesbury, or were at least assembled here using components from elsewhere.

- 1899 – proposed production of a Bagley electric auto
- 1899 – S. R. Bailey produces a prototype electric auto
- 1900 – proposed production of an unknown gasoline auto
- 1900 – Carriage Machine Co. reported auto proposal, unverified
- 1901 – Arthur England makes a personal gasoline auto
- 1902-1903 – Boston & Amesbury Mfg. Co. produces gasoline autos
- 1906 – S. R. Bailey produces a prototype *Essex* steam car
- 1908-1915 – S. R. Bailey produces Bailey Electric autos
- 1908-1910 – Graves & Congdon produces *Crown* gasoline autos
- 1912-1914 – Howarth & Rogers produce *Ultra* gasoline autos

Electric automobiles already existed, but vehicle battery technology was still primitive. Shown is the only reference found for this company in the Amesbury Daily News; nothing of it appears again. Clarifying, this does not describe an actual company formation, but only a single meeting outlining a proposed structure. To start, a stock company would have had to be chartered and stock paid in.

One other source (next page), based on this article, suggests a possible prototype, but if such was an actual vehicle it certainly would have merited here at least a statement of its existence and probably a fairly complete description. Instead, no vehicle concept is even claimed to exist. Any prototype probably would have been of the electric motor, the only object on which actual work is proposed.

C. J. Bagley was a local machinist and electrician on Oakland Street, occasionally advertising in the Daily News. He advertised on 1/17/1903 that he was selling out a lot of wire, zinc and carbon plates, and parts of batteries, motors, armatures, magnets, etc., seemingly going out of business.

GOOD NEWS.

Amesbury Automobile

Co. Organized.

Officers Elected at a Meeting Monday.

Our Leading Carriage Men Will Back It.

Motor the Invention of Electrician

C. J. Bagley of This Town.

Mr. C J Bagley the well known electrician of this town, has invented an electric motor that it is claimed is far ahead of any now in use. It is light very powerful and of an entirely new design.

He called the attention of several of our well known carriage men to it and they were so favorably impressed with it, that a meeting was called yesterday at the office of J T Clarkson & Co. the result being that a company to be known as the Amesbury Automobile Co. was organized.

The capital was fixed at \$150,000 the shares being of a par value of \$25 each.

The following temporary officers were chosen;

President, J T Clarkson of J T Clarkson & Co.,

Secretary, C F Worthen.

Treasurer, Edw R Briggs of the Briggs Carriage Co.

Directors, the above and D J Marston of the Amesbury Carriage Machine Co, P H Connor of the Connor Carriage Co.

John Currier of the Currier Cameron Co. James Hassett of Hassett & Hodge.

James Drummond of Folger & Drummond,

Geo. P Dennett of C N Dennett & Co.

John S Poyen of the Pneumatic Carriage Co.

C J Bagley the inventor,

As will be seen the interested parties are all practical carriage men and the success of the company is assured.

Work on the motors will begin at once

As is well known, horseless carriages of various kinds of motor power, oil, gasoline, steam etc, are on the market but are all objectionable from either one or the other causes, viz,—heat, danger from explosion or odor and most of the machines on the market combine all of the above. Electricity has also been used but the extreme weight of the machine and the trouble to get the batteries recharged has operated against them

In the motor invented by Mr. Bagley these elements have been overcome and bid fare to revolutionize the motor carriage business.

Amesbury Dailey News, September 12, 1899, pg. 2

Another Look at Amesbury Automobile Company, 1899

5/31/2022

The description below was found in Royal Feltner's excellent website dedicated to early automobiles (earlyamericanautomobiles.com), stated there as appearing in the 1979 edition of *Standard Catalogue of American Cars* by Beverly Rae Kimes & Harry Austin Clark. Elsewhere throughout this presentation the 1996 edition of that publication provides similar brief descriptions of Amesbury-made automobiles. The authors had found these during years of researching period trade journals and other such sources to extensively document American automobile manufacturing entities. Many such near misses and one-hit-wonders appear in their *Standard Catalogue*.

“At the turn of the century Amesbury was among the leading carriage manufacturing centers in the United States. Organized in 1899, with a capital stock of \$150,000, was the Amesbury Automobile Company. Involved in the venture were a number of local carriage builders, including J. T. Clarkson, C. F. Worthen, and Edward R. Briggs. The chief engineer was C. J. Bagley, a well-known electrician in town, who had designed an electric motor which was claimed to be the lightest and most efficient appliance yet built. Prospects bode well for this venture. "There are no better carriages in the world than those built in Amesbury" The Motor Review stated, "and its high reputation will give to the new company a prestige that a town of lesser reputation cannot acquire for years." It appears that the Amesbury Automobile Company proceeded no further than building a prototype or two, before the carriage makers involved returned to their horse drawn efforts and Bagley returned to his electrical work.”

The Gap in Local Carriage Making Capability

Amesbury carriage making evolved along a low-budget model accessible to a community of small businesses. Production efficiency derived from labor management of a simple assembly line in which major sub-assemblies were hand carried from one station to the next, accumulating added components from specialized workers. Most shops had no power, relying on hand work that could include such human powered machines as foot treadle lathes and saws. Primary functions were woodworking and joinery, akin to heavy-duty cabinet making, with several labor-intensive specialties of blacksmithing, finish painting, trimming of leather and fabric upholstery, and stitching of leather fenders and dashboards.

A half-dozen shops grew larger and more capital intensive, having steam engines for sawing and shaping from rough lumber to smoothed major sub-assemblies of wood bodies, wheels, and gears. Such companies then offered to other local shops well-shaped sub-assemblies and complete carriages that could be finish-painted and trimmed. As major woodworking followed the horsepower many local makers ceased having carpentry facilities, performing only finishing, painting, and trimming in various grades of comfort and luxury (a national trend as major producers supplied 10,000 local American carriage and wagon makers during the 1890s).

Completely missing from Amesbury production were casting, forging, and machining of such iron/steel components as axles, wheel journal boxes, suspension springs, fifth-wheels, large brackets, footstep brackets, and fasteners (threaded nuts & bolts). These components were made available from outside industrial suppliers through carriage hardware purveyors such as Charles Wing on Water Street and John Poyen of Elm Street. The main machinery maker was Pettingell Machine Co. with their foundry on Mechanics Row, making specialized wood-working machinery for carriage wheel makers. After being burned out a second time in 1891, they moved to Lawrence, Massachusetts, returning to Amesbury in 1905 as a specialized maker of formed sheet metal automobile panels and automatic power hammers for forming them. Local industry otherwise substantially lacked sophisticated metal-working machinery and expertise, especially along lines of precision machining and complex machine assemblies such as engines.

Slightly Reducing the Gap - “Bike” Gears and Wheels

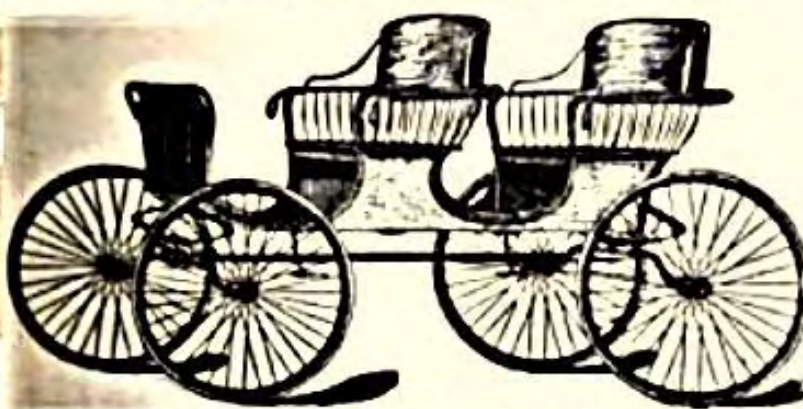
Bicycles were a growing trend from around 1870* that popularized a device having a metal tubing frame, and wire spoked wheels with formed sheet metal rims that would hold rubber tires. The classic precarious “high wheeler” intimidated the public, but popularity of the “safety bicycle” after 1885, having chain drive and conveniently small diameter wheels, sparked a wildly popular craze. Industrially produced tubing and other materials were readily available, tubing being formed and brazed by hand torches into various styles of bicycle frames. Such fabrication methods were accessible to hundreds of makers around America, such that the bicycle craze funded airplane development in both the Wright brothers’ and Glenn Curtiss’s bicycle shops.

A carriage “gear” being the undercarriage, having wheels and spring suspension, bicycle frame construction offered a strong durable structure that was equally available to carriage gear makers. As with carriage heavy carpentry, manufacture of “bike gears” for carriages became a specialty (next page), but one that was likewise within reach of several local producers. In similar fashion, several local wheel-making shops began concentrating on wire spoked wheels having formed sheet metal rims that would receive rubber tires. Compared to classic iron tires, rubber offered both more comfort and less noise on cobblestone streets. Industrially supplied roller bearings also offered durability and a smoother ride. Finally, air filled (pneumatic) tires spread over into carriages, furthering the trend for smoother, quieter operation. Technology-facilitated comfort was evolving into the carriage trade, including bike gears akin to a structural metal chassis that could accommodate a heavier vehicle.

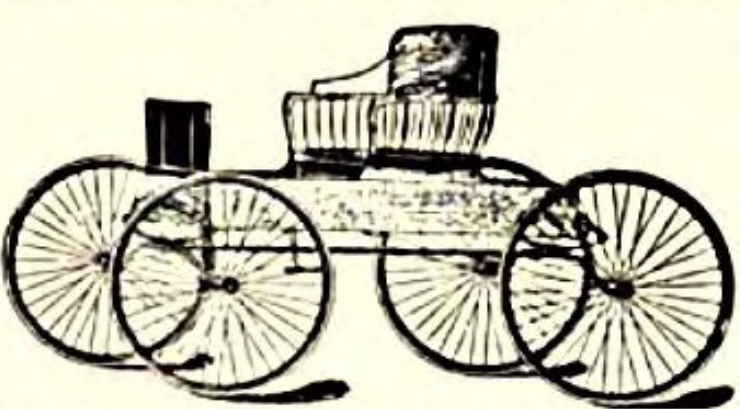
Dudley J. Marston, a wheel maker using much of his own machinery, had occupied part of the Colchester Mill building on Elm St. in 1877 after being burned out of his previous location. Selling that business in 1888, he began making carriage machinery (as the *Carriage Machine Co.*) and bike gears (as the *Pneumatic Gear Co.*), the latter sold through a consortium called SAFE (Standard Anti-Friction Equipment) that included a Chicago bearing maker. SAFE purchased Marston’s business in 1900. Samuel R. Bailey specialized in making sleighs but branched out after 1888 into making carriages and then bike gears, as did Biddle & Smart.

* An excellent intro to bicycles resides at <https://amesburycarriagemuseum.org> Researching People & Place, *Bicycles in Amesbury*

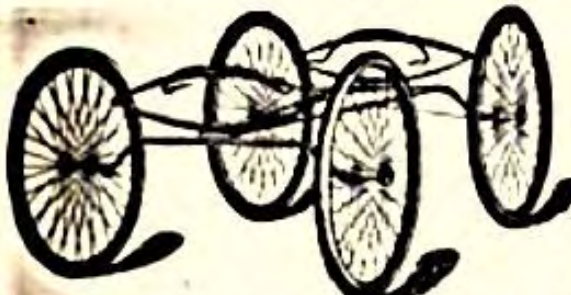
FITCH GEARS



FITCH PNEUMATIC SURREY in-the-White.



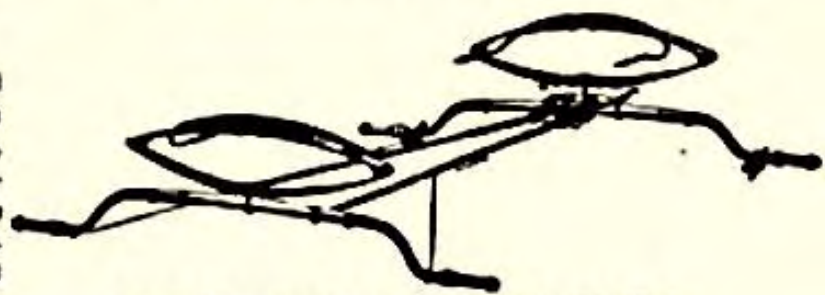
FITCH PNEUMATIC ROAD WAGON in-the-White)



FITCH PNEUMATIC ROAD WAGON GEAR.

PRICES TO SUIT THE TIMES.

Send for our latest catalogue, with full line of gears, wagons in-the-white and carriage specialties illustrated.



FITCH IMPROVED BIKE AND PNEUMATIC GEAR.

We make Bike Gears and Wagons in-the-White, with Wood Hub Wheels and Solid Rubber Tires.

SHOWING ALL STYLES OF PNEUMATIC AND BIKE WORK.

FITCH GEAR CO., Rome, N. Y.

Hub Magazine, 1902

An example of all-metal “bike gears” commonly available by 1900, having either solid rubber or pneumatic tires. Also available are wagons “in-the-white”, being complete vehicles having no final painting or upholstery (trimming), to be completed by smaller local carriage shops.

Electric Auto Prototype by S. R. Bailey, 1899

Samuel R. Bailey had begun in Maine as a maker of sleighs, then relocated to Boston, where he also developed and patented machines for bending wood. He set up at the 79 Elm St. factory in Amesbury in 1882 making sleighs and bent wood shafts, poles, and bows for pulling sleighs and carriages. Separately, Frank A. Babcock was the largest carriage maker burned out in the great Carriage Hill fire of April 5, 1888, whereupon he built a large new factory along Chestnut Street. Because of disagreements with his backers, he withdrew from the enterprise and left town, after which the building functioned as an industrial condominium for multiple businesses.

Samuel Bailey moved into the Babcock building soon after its 1889 opening, adding carriages to his catalogue. These were utilitarian “piano box” all-wood buggies having cargo space behind the seat, a style that became known as “road wagons”. Inclined toward technology, Bailey moved into bike gears and wheels, accumulating the manufacturing capability to build these entirely in-house.

In Margaret Rice's book, "Sun on the River", the Bailey Family History, 1955, she states that when Col. Edward Bailey, S. R. Bailey's son, returned home from the Spanish American War in 1899, his father took him to the factory to show him his surprise. It was a Bailey Electric Victoria Phaeton. His son stood looking at what he called the most beautiful car that he had ever seen. He wanted to take it for a drive, but his father said that the weight of the battery was too much and that they had to wait for a lighter battery. This was the first automobile built in Amesbury.



A later production Bailey electric Victoria Phaeton, having an art nouveau style slightly reminiscent of the later Citroen 2CV.

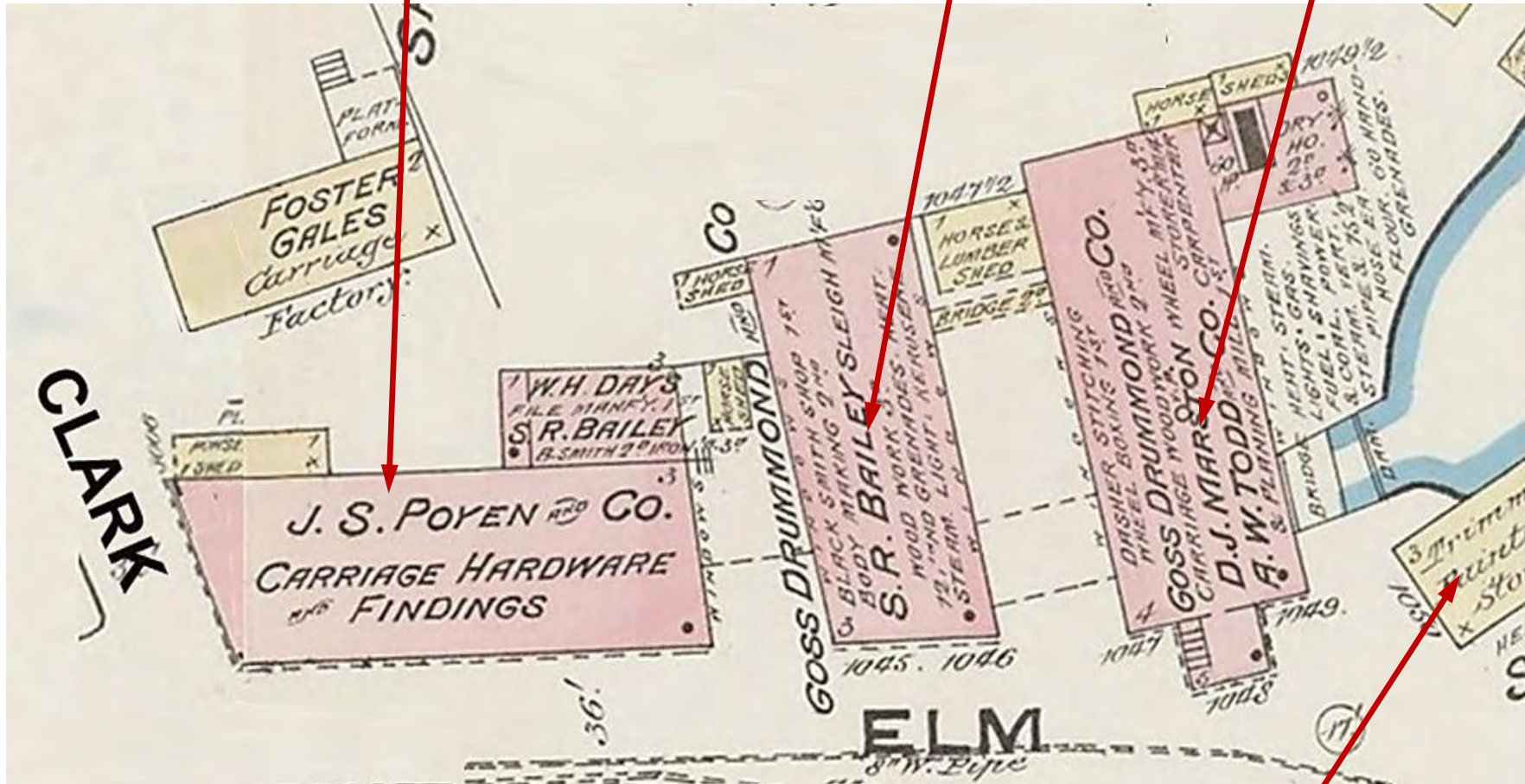
from Royal Feltner's website, earlyamericanautomobiles.com

Factories at 77, 79, 85, & 87 Elm Street, 1885

John Poyen was an 1884-1895 purveyor of carriage iron work and trimming fabrics, later entering carriage making as the Pneumatic Carriage Co.

Samuel R. Bailey made sleighs and bent wood components, moving toward carriages and gears after 1889 in a new factory on Chestnut Street.

The Colchester Mill, where Dudley Marston moved to in 1877, selling out to F. S. Merrill in 1888, then retiring as a town selectman and state representative.



1885 Sanborn Insurance Map, sh. 3

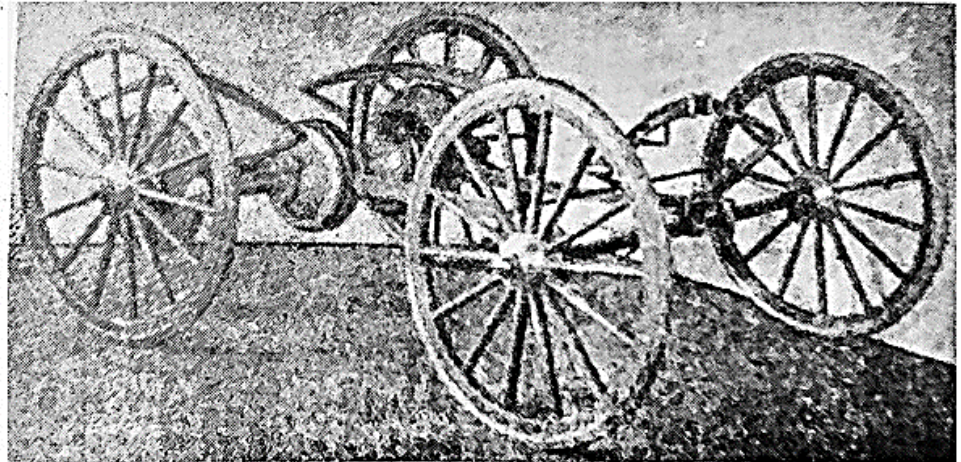
87 Elm St., Former Seth Clark Jr. Carriage factory. D. J. Marston re-entered industry here as Carriage Machine Co., removing to the corner of Chestnut & Oakland Streets as Pneumatic Gear Co., both with Cha's. E. Stone, and leaving 87 Elm vacant in 1900.

A 1900 Amesbury Automobile Reference

CARRIAGE — The Carriage Machine Company of 87 Elm Street in Amesbury, Massachusetts, was indicated as an automobile manufacturer in the Hiscox book *Horseless Vehicles, Automobiles, Motor Cycles* published in 1900. Further documentation is lacking.

Standard Catalogue of American Cars, Beverly Rae Kimes & Harry Austin Clark, Krause Pubs. 1996, pg. 256

The 1901 Standard Anti-Friction Equipment Co. was created mainly by the amalgamation of the axle department of the Chicago Screw Co., manufacturer of Empire Ball Bearing Axles and the Amesbury Pneumatic Gear Co., supplemented by a long term working agreement with the Sheldon Axle Co., for the purpose of manufacturing axles, wheels, gears, and parts for all kinds of vehicles from the lightest speed wagon to the heaviest truck and automobile. The company manufactured a complete line of their own design, but were prepared to manufacture to order anything the carriage or automobile manufacturer wanted, thus enabling builders to purchase standard styles or to have their own made up as they would in their own factories.



Automobiles Built in Essex County Mass., Hayden Shepley, 1976, pg. 12, text and photo

Carriage Machine Co. and Pneumatic Gear Co. were previously mentioned businesses of Dudley J. Marston and Charles E. Stone. They sold Pneumatic Gear Co. in late August of 1900 to SAFE (Standard Anti-Friction Equipment Co.) remaining in its employ as managers*. Marston may have previously been an agent for SAFE, and the business continued in Amesbury for a time, the local branch being purchased ca. 1903 by carriage maker, Patrick Connor.** From the above photo, SAFE produced, among other things, gears with rear axle drive for automobiles. It seems likely that SAFE came no closer than this, in fact or intent, to making a complete car, but attracted the above notice as a potential auto maker.

* Amesbury Dailey News, September 1, 1900, pg. 2

** *History of Carriage Manufacturing and Auto Body Building*, typescript, 1955, John J. Allan, pg. 72

Another 1900 Rumor of Amesbury Automobile Making

LITTLE — The Little & Congdon Company of Amesbury, Massachusetts, was organized during the summer of 1900 with a capital stock of \$100,000 for the manufacture and sale of automobiles. Incorporators were J.H. Little, S.W. Congdon, J. Joyce, J.F. Finn and C.S. Mayo, all of Amesbury. Manufacture is doubted. *Standard Catalogue of American Cars*, Beverly Rae Kimes & Harry Austin Clark, Krause Pubs. 1996, pg. 888

It is rumored that a new automobile company has been organized in town and will at once begin manufacturing, having secured an excellent motor

Amesbury Dailey News, August 21, 1900, pg. 3

It is rumored that an automobile company will be formed at once and occupy one of our vacant carriage factories.

Amesbury Dailey News, August 28, 1900, pg. 3

There is no certainty that the Little & Congdon Company is that implied in the two Dailey News pieces, although all three are tied to the summer of 1900. No specific mention of Little & Congdon has been found in the Amesbury Dailey News at all. The two news articles could refer to the previous speculation of Dudley Marston's Carriage Machine Company. That 87 Elm St. address matches the above as a vacant carriage factory in 1900, inviting more speculation regarding the above speculation. Of note is that the rumored venture was seemingly launched on having found a suitable working engine that could be dependably procured, rather than risking the expense of trying to develop and make an engine.

John Joyce was a town assessor at the time of the alleged Little & Congdon episode.

Dudley Jefferson Marston 1843-1927



Marston came to Amesbury with Locke & Jewell carriage wheel makers in 1867, where he patented wheelmaking machinery. Having joined William Biddle on Water St. he was burned out in their 1876 fire, then relocating to the Colchester Mill at 85 Elm Street. He sold that in 1888 over health issues, possibly related to Civil War service. Exemplified by a windmill-powered pumphouse at the corner of Marston and Oakland, he had varied interests

that included automobiles, and he was a proposed director for the 1899 Bagley electric car. He patented diverse such items as concrete building blocks, wood flooring, and an electric bug trap. After nearly a decade away from active industry, he joined with Charles E. Stone (son-in-law of carriage maker E. S. Felch) building a new form of wheel boxing machine (for setting journal boxes into hubs concentric with their outer rims). They thus moved their Carriage Machine Co. to 87 Elm St. in 1897 while considering improvements to carriage bike gears. When they moved these ventures to Carriage Hill in early 1900, they assumed the name Pneumatic Gear Company. He was a manager at R. F. Briggs' North Carolina wheel factor in the very early 1900s but returned to Amesbury and is buried at Mt. Prospect Cemetery.

THE subject of this sketch was born in Chester, N. H. In early life he was employed upon a farm, but like Daniel Webster, being allowed to hang his scythe in the manner it best suited his desires, hung it upon an apple tree, and engaged himself to learn the trade of a wheelwright. Upon the call for volunteers, Mr. Marston enlisted in a New Hampshire regiment, and served for three years. He returned home, and again entered the routes of peaceful labor, and accompanied the late J. F. Locke to this town, continuing in his employ until solicited to take charge of the wheel department of Biddle's mill. He left this position and established business for himself in the Colchester mill, invented and patented a new wheel, which met with a ready sale, and his establishment was one of the most successful in the town. Failing health reminded him that respite from toil was necessary. He sold his business to Mr. Merrill of Merrimac, visited California, where he spent several months, and returned home. He was selected as one of the present Board of Selectmen of the town, and at the State election, elected to represent the First Representative District of Essex, in the Legislature, receiving the largest vote ever cast in the town and district.

Mr. Marston is a member of E. P. Wallace Post, G. A. R., and of the Board of Trade.

Amesbury Souvenir 1891, Amesbury Dailey Souvenir Edition, January 29, 1891, pg. 23

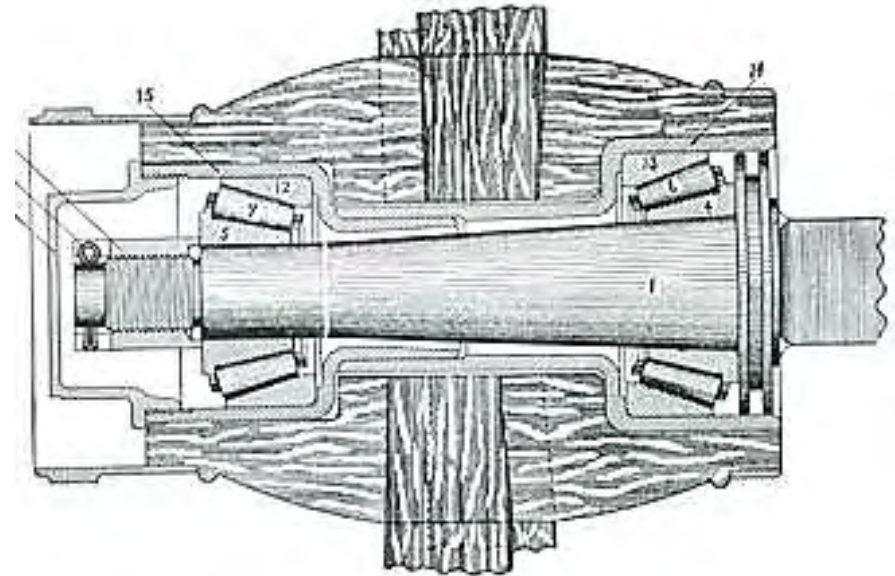
Bearings in Carriage Bike Gears

Timken Tapered Roller Bearings & Axles (patent 1898)


Henry Timken was a St. Louis carriage and wagon maker who found, primarily with heavily loaded wagons, that side loads during turning would tend to bind simple tapered journals. Most vehicles of the time had greased tapered journals on axles that mated with tapered journal boxes in wheel hubs. The taper would resist inward side loads but would also wedge tighter, effectively applying a brake that horses had to overcome to keep moving.

Timken patented in 1898 a bearing design in which two roller bearings were set at opposing angles, one at each end of a journal, shown upper right. Because rollers were at an angle, they resisted side loads in one direction (both directions for a set of two), but also required that the rollers be tapered themselves (conical) for proper pure rolling action without sliding. Shepley specifically mentions Timken bearings in the Graves & Congdon *Crown* automobile.

The next year Timken formed the Timken Roller Bearing Axle Co. in St. Louis, then moved it to Canton, Ohio in 1901, nearer manufacturing centers of both automobiles and steel. The company prospers today still making tapered roller bearings, frequently used in pairs, in addition to specialized steels.



The TIMKEN ROLLER BEARING CO.
 MAKERS OF TIMKEN ROLLER BEARING AXLES
for WAGONS and CARRIAGES



Canton, Ohio

A Set of
TIMKEN AXLES
 will save your
CUSTOMERS
 these two horses

This statement is based on the experience of
 thousands of users.
 New Catalog and Price List upon application.

THE TIMKEN ROLLER BEARING CO.,
 CANTON, OHIO.

BRANCHES - 10 E. 31st Street, New York.
 629 Wabash Avenue, Chicago.

Arthur England's Automobile, 1901

ENGLAND — Amesbury, Massachusetts — (1901) — In 1901 Arthur England built the first automobile in Amesbury. All components, including its engine, were hand built, and the car was displayed for public view that August in the machine shop of George W. England.

Standard Catalogue of American Cars, Beverly Rae Kimes & Harry Austin Clark, Krause Pubs. 1996, pg. 538

The Amesbury Dailey News claimed this as the first Amesbury-made auto (below), perhaps unaware of S. R. Bailey's electric prototype. It was seemingly built for personal satisfaction, with no suggested intent to manufacture. There is an unfortunate total lack of description of the car or its engine, steering, etc.. Hand building an engine with limited facilities occasionally occurred, the bigger question being where the knowledge came from.

The Wright brothers had machine capability in their bicycle shop, where their machinist, Charles E. Taylor, had made a 1-cylinder gas engine that powered their shop and wind tunnel. Taylor also made their airplane engines, which were in-line 4-cylinder, 4-stroke engines of 4X4 inches (bore and stroke). Raw castings for their aluminum block and iron components were from a nearby foundry, and the specialty of gear cutting was done in a nearby machine shop. The rest was made in their bicycle shop plus a purchased lube pump and a magneto ignition system by Dayton Electrical Mfg. Company.

Arthur England's engine had some similar story, and most of his auto was likely made intown. He moved to Florida as an engine expert* in late 1901, operating motor launches there, but returned to Amesbury by spring, reporting that Florida had more people than jobs. According to Shepley**, John J. Allen reported that Arthur England made the engine and all other parts.

* Amesbury Dailey News, February 17, 1902, pg. 3, and Amesbury Dailey News, April 10, 1902, pg. 2,

** *Automobiles Built in Essex County Mass.*, Hayden Shepley, 1976, pg. 27

THE FIRST AUTOMOBILE **Built in Town by Arthur Eng-** **land.**

Arthur England, son of Geo. W. England the machinist has completed the first automobile which has been built in Amesbury Last week he took a ride to Newburyport, the "Auto" works all satisfactory and shows more of the enterprise of our Amesbury mechanics.

Amesbury Dailey News, August 23, 1901, pg. 2

Considerations in Making Early Complete Automobiles

Carriage builders were primarily woodworkers, dependent on acquiring such outside materials as fabrics and leathers for trimming, rough forgings, lanterns, and finished axles, springs, and fifth-wheels. These supply chains continued supporting hundreds of automotive startups during the early 20th century. There were already suppliers of industrial gearing and shafting, while bicycles and industrial conveyors had boosted chain and sprocket production used by autos for decades.

Motive power was the large new need. Internal combustion engines were still young and inefficient, and complicated. Steam engines were far more mature but still complicated plus having an added boiler. Still, many steam engine makers offered a variety of models. Young but vastly simpler were electric motors, hampered (as today) by battery capacity and recharging. From 1900 these power sources competed in autos for fifteen years. Making these would have severely burdened an automobile startup, so that most economically efficient was for specialized engine makers to serve numerous auto makers, air-cooling offering the simplest internal combustion engines, but not necessarily the most durable.

Another issue was understanding technical requirements and operator convenience for clutches and gearboxes. Cone clutches were popular for a time. Locally, Upton Machine of Beverly made clutches and gear changers as well as motors. Many early auto makers used gearboxes from Warner Gear (of Muncie, Indiana) and sliding faceplate clutches from Borg & Beck (of Moline, Illinois). As an apropos note, Borg & Beck had begun as a machine shop to produce equipment for making carriage poles, and then stumbled into designing their clutch while assisting a local truck maker. The two companies merged in 1928 to beget today's Borg Warner corporation.

While Indiana and Illinois seem like, and were, faraway agricultural hinterlands, the region had major carriage and railroad industries and had further industrialized on the energy resource of the Trenton Gas Field across northern Ohio and Indiana, then the largest known gas deposit in America. In 1907 Maxwell Automobile opened the world's largest auto plant in New Castle, Indiana, a bit south of Muncie. America's breadbasket was becoming its automobile basket, accumulating a wide range of related industries throughout the Midwest.

A NEW AUTOMOBILE.

**Given a Successful Trial by Miller Brothers
Friday--Everything About It Original
Except axle Gearing.**

Amesbury is ever original and new things are not rare in the Carriage industry but there has never been an automobile built here before the one just about completed by Miller Bros. and which was taken out for a trial trip yesterday. Everything about this Auto is original except the rear axle gearing.

The body was built from a special design by them and sits on a steel frame that holds the motor and underneath machinery, thereby removing any suspension weight from the body.

The Auto weighs about 1400 pounds and the motor complete weighs 234 pounds. This motor is of a new design being the invention of a Mr. Spillier of Boston. It is a double cylinder motor and was built by Mr. Orswell who was here this morning fixing the case bearing on the rear axle which broke yesterday on the trial trip.

This piece was purchased on warranty and the breaking is no fault of the motor makers, and was an unimportant accident anyhow.

This motor is called an eight horse power motor but has developed eleven and one tenth horse power.

The jump spark igniting system is

used and the Orswell perfection plug which is the special invention and manufacture of Mr. Orswell, who built the motor. It is the best plug ever yet used in a motor.

The motor is a gasoline expansive motor, and is very noiseless in operation. Twenty feet away one can't hear its operation.

It has a beautiful pair of Gray & Davis Auto. lamps. Both the inventor and builder of the motor are young men and with them and Miller Bros. there is a good nucleus for an Auto manufacturing Co. here. This motor is superior to others of the same size and weight.

ROBERT G. PATTEN
 Real Estate and Insurance,
 Patten's Block, Main St., Amesbury, Mass.
 FIRE INSURANCE Placed in the
 Strongest Companies
Mortgages
 Placed at Current Rates of Interest.
 Special Attention Given to Selling and Care of Real Estate.
 Telephone at office and residence

This newspaper article introduced the Boston & Amesbury automobile, here attributed to Miller Brothers, the carriage makers. It perhaps was not yet publicly clear that John Miller was splitting from his brothers as a separate venture, with both Miller businesses working in the same factory at this time. Seemingly coincidentally, an advert for Robert G. Patten (in the Patten Block) resides adjacent to the article, Patten being investor and officer in Boston & Amesbury Mfg. Company. He was a son of brickmaker and banker, Robert Patten of Patten's Pond.

A prototype automobile is described, likely that seen on the 2nd following page. Other than the body and related accessories, most of the prototype equipment had likely been made in Boston and then final-assembled in Amesbury.

The enterprise advanced further than many Amesbury auto making efforts, the article here demonstrating the wealth of information that has been found. This story will thus be pursued in some detail to illustrate the demands of establishing auto manufacturing in town.

Amesbury Dailey News, May 17, 1902, pg. 2

Ignoring some confusion in the description below regarding relationships with Miller Brothers, it is well established that Harry A. Spiller came to town in 1902 as President of the Boston & Amesbury Mfg. Company. John J. Allen reports that local principals were John Miller Sr., Robert G. Patten, George W. Bryant, and Jeremiah J. Reardon, plus a Mr. Seymour of Boston, (who remains unidentified), and that they started in 1902 in the Oakland St. building then occupied by Miller Brothers*. (Jeremiah J. Reardon assisted in compiling J. J. Allen's 1955 history.) The automobile had a water-cooled engine of Spiller's design and features, such as an accelerator foot-pedal, that facilitated driver convenience in starting and operating the vehicle. Spiller had worked with an Israel C. Orswell, who developed the engine ignition system and made the engines. They likely had a working bare-chassis concept car that was then used for the prototype automobile.

Spiller found a body supplier in John Miller Sr., maybe sparking interest among other locals as investors. The plan was to build the entire auto in Amesbury, including engines, but conditions prevented reaching production. Spiller never lived in town but was noted in the Dailey News as occasionally visiting for business purposes. His last noted visit was in May of 1904.

BOSTON-AMESBURY — Amesbury, Massachusetts — (1902-1903) — In 1900 H.A. Spiller left the Pringst-Spiller Power & Auto Company in Trenton, New Jersey, and took his automotive ambitions to New England. Settling in Dorchester, Massachusetts, he had built a small gasoline runabout by October that year, but he tried without success to get his Spiller Motor Carriage Company going. Better luck arrived two years later in Amesbury. For a while it appeared that he would enter both the automobile and the engine-building field, but after he sold one of his engines to the carriage-building Miller brothers for their first car, they elected not to go into manufacture. By that time, the summer 1902, H.A. Spiller had organized his Boston & Amesbury Manufacturing Company, however, the Boston-Amesbury was introduced at the Mechanics Fair in Boston that November. The exhibition car had been driven 2,000 miles already, its maker said proudly, "but shows no evidence of hard use." The Boston-Amesbury may have been the first automobile sold to someone handicapped. A one-armed visitor to the Mechanics Fair "was much taken with it," according to Spiller, "because it was the first motor vehicle he had seen that could be driven safely by a man deprived of the use of one hand." By the time the Fair had ended, Spiller had orders for 15 cars, and was preparing for a production of 200 units for 1903. The Boston-Amesbury was distinguished by its front-mounted coil radiator, its early use of left-hand steering, and a neat body design. It was available in a pair of two-cylinder models, an 8 hp 1,800-pound two-seater and a 16 hp 2,400-pound four-seater. Undercapitalization of his venture was probably the reason the Boston & Amesbury Manufacturing Company of H.A. Spiller failed.

*History of Carriage Manufacture & Automobile Body Building in Amesbury, John J. Allen, ca. 1955 typescript, pg. 62

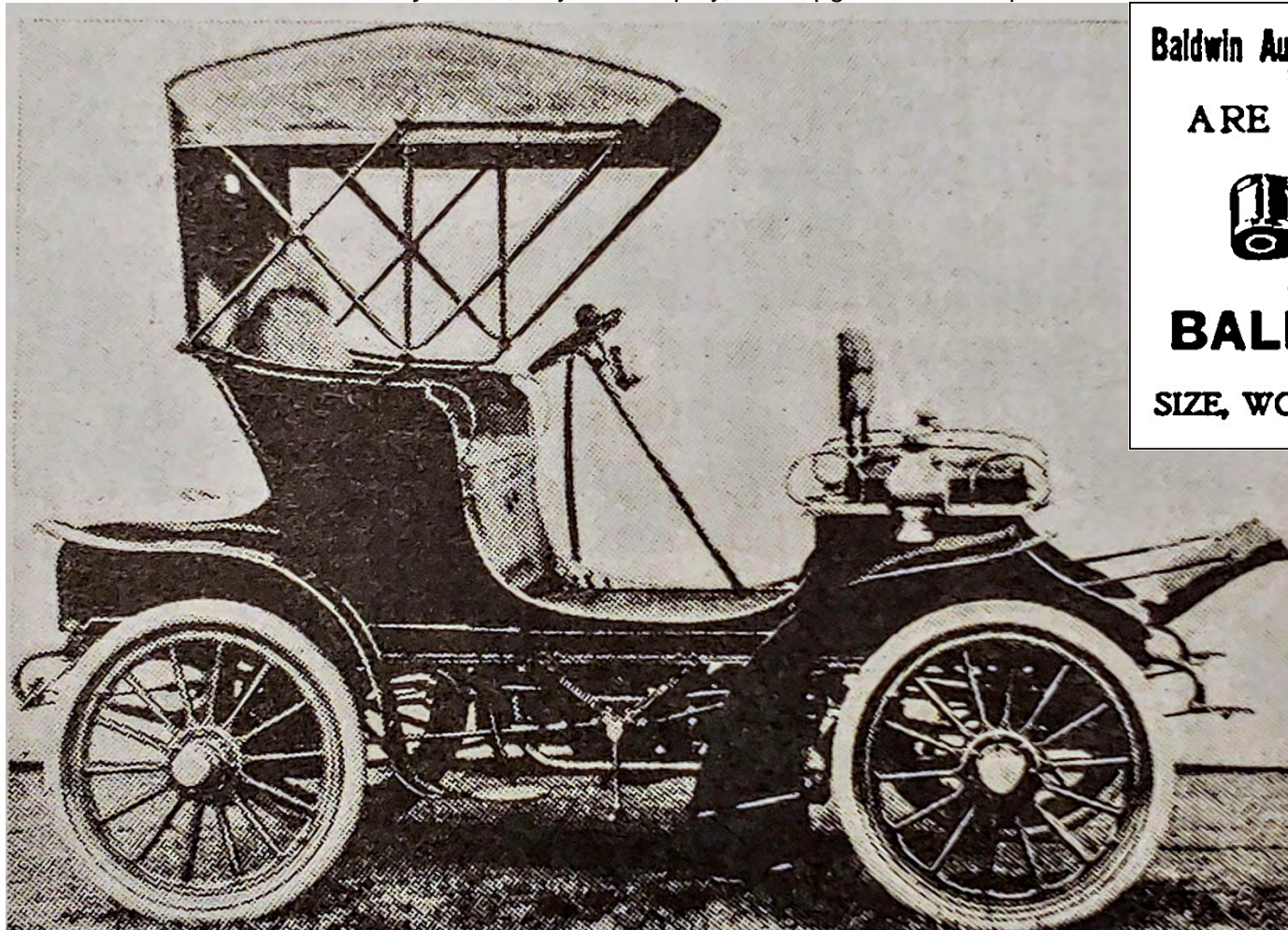
Standard Catalogue of American Cars, Beverly Rae Kimes & Harry Austin Clark, Krause Pubs. 1996, pg. 138

Boston & Amesbury Mfg. Co. Gas Automobile

“The 1902 Boston & Amesbury was available in three sizes of engines: two-cylinder 4X4 inches (bore & stroke) and 5X5 inches, and four-cylinder 4X4 inches. The smaller size is shown below. They used Baldwin chains and International Endurance tires. In 1902 a few automobiles were built at the Boston & Amesbury Co., Oak Street, Amesbury”. The small front seat could be folded and stowed under the larger back seat.

- See article on following page describing the company and automobile ●

Automobiles Built in Essex County Mass., Hayden Shepley, 1976, pg. 32, text and photo



Baldwin Automobile Detachable Chain Co.
WORCESTER, MASS.

ARE THE PIONEERS.



PATENTED DEC. 18, 1900.

BALDWIN CHAINS

are the standard for
SIZE, WORKMANSHIP and FINISH

Baldwin chains, with 1900 patent. were detachable via a “snap-on” removable link.

OUR NEW

Automobile Built by Miller Bros.

Has Been Perfected and Will be
Put on Exhibition.

It Promises to Be One of the Best Ma-
chines on the Market.

The firm of Miller Bros. carriage builders have the unique distinction of being the first firm in Amesbury to build a complete automobile.

The product of their work has just left the hanging up room of the Shields Carriage Co after undergoing finishing touches preparatory to being put on exhibition as a product of Amesbury skill.

The machinery, body gear, etc., was built by Miller Bros. and Shields Carriage Co. trimmed and painted the carriage. The carriage complete weighs 1800 pounds and is equipped with an eleven horse power gasoline engine. The engine is speeded at thirty miles an hour but is capable of greater speed under favorable circumstances.

One remarkable special feature about this automobile is that the low center of gravity enables it to round a sharp corner at full speed without any danger whatever. All of the weight is hung below the body. It has a new steering method, something different from the ordinary way. It is called the Irreversible Steering Device. A long iron rod runs from the

front axle up through the floor of the body to the top of which is attached the wheel to steer with. There is a very loud gong attached to the wheel.

The carriage is built so that it can be easily changed inside of a minute from a one seat into a two seated carriage with very little work.

An extra seat is carried under the rear seat which can be taken out, when needed, and placed in position on the front of the carriage. This seat is used either forward or backward. All the tools necessary to mend a break are carried in a bag made for that purpose under the seat fall.

In ordinary machines a great deal of time is spent in fussing around and crawling under the machine in getting ready to start but all this is done away with in this machine. There is a little switch button in the center of the front seat which when turned gives a spark which starts the engine.

The brake lever is on the left of the seat. When this brake is on everything is out of gear, the machinery stops.

The speed regulator, which regulates the speed is in the bottom of the carriage and is operated by the foot. One quarter turn of the crank starts the spark and the motor. Another special feature about this machine is the tanks for gasoline, water and oil are made of solid copper. They are usually made of galvanized iron which will rust and decay quickly. The trouble with a great many machines is that they get too hot while in motion. This is also done away with by a water cooled motor. Crosswise under the front seat are three tanks for water, oil and gasoline, respectively. The water tank is right behind the cooler, which is made of tubes with copper flanges

to form a circulation and which occupies the whole of the under part of the front of the body. The water runs from this tank through pipes into the motor, back into the tank and so on keeping the motor thoroughly cooled all the time. The gasoline tank carries 6 gallons of gasoline which will carry the machine 200 miles. Another one of the special features is the oiling device. It is so arranged that pipes lead from the oil tank to all parts of the machine so that they all get a good supply while in motion. There are two large fenders on each side to prevent the people in the machine from getting mud and dust in their faces. All the railings, lamps, seats railings, etc., are finished in brass. The lamps were built especially for this job by Gray & Davis. The gear and running works is painted blue with stripes and the body is painted red with black moldings. The top and seat is trimmed with the best green leather, and the top is lined with green broad cloth. The machine is easily operated and can be easily learned how to run by a person of ordinary intelligence in a day with a few instructions. The owners of the machine are H. A. Spiller a mechanical engineer of Dorchester and Miller Bros., and to them belongs great credit for having perfected such a complete machine in every way. They are going to use the machine around town for a week to see if it is in perfect order after which they are going to take it over the road to Boston where they are going to use it for exhibition purposes.

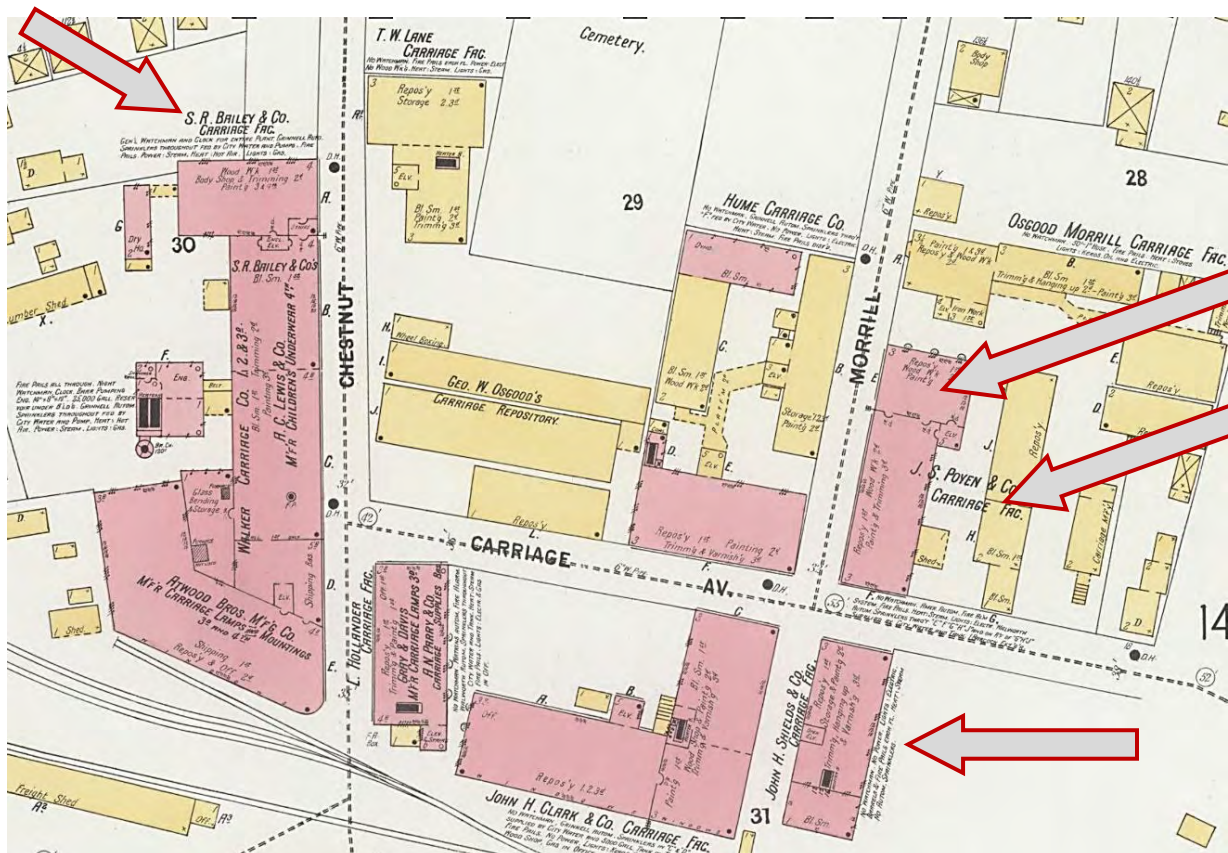
Amesbury as well as Miller Bros. may well be proud to have the honor of turning out such a model modern mobile at this first high grade machine.

Amesbury Daily News, June 26, 1902, pg. 3

Miller Brothers Carriage Company

John J. Allen, pg. 154, and 1899 Sanborn Insurance Map, sheet 3

Miller Brothers (John, Thomas, Robert and William) was founded in 1888 after the Carriage Hill fire burned them out of their jobs. Their Market St. facility was at the corner of Hill St. opposite the Agricultural Fairgrounds. They built carriages and sub-assemblies in the white, having no trimming or painting, which were wholesaled to local carriage finishers. Trimming and painting of Boston & Amesbury automobiles was consequently done by Shiels Co., who specialized in such finishing in their factory at 11 Oakland Street. Millers' location proved inconveniently remote for transporting their wares during the 1890s depression, but they kept sufficient Carriage Hill clientele to remain solvent. John S. Poyen, who had left the carriage hardware business, purchased in 1895 the old William Smart (later D. J. Folger) factory at 12 Oakland St. at the corner of Morrill Street. The site also had the adjacent 14 Oakland St. factory building that Miller Bros. immediately occupied.



John S. Poyen had purchased the brick factory still extant at the corner of Morrill and Oakland Streets, the latter then called Carriage Avenue. He then rented to Miller Brothers Carriage Co. the accompanying yellow (wood frame) building next door.

Meanwhile, S. R. Bailey was renting space in the long brick factory on Chestnut Street that had steam engine power, while John Shiels Co. was opposite Miller Brothers on Oakland Street.

The most important matter for which the meeting was called came next, namely to hear from the representatives of the Boston & Amesbury Manufacturing Co., in regard to the location of their industry in Amesbury. Mr. Spiller, president, R. G. Patten, secretary and John Miller treasurer were introduced.

Mr. Patten was the first to speak. He said that the company was already organized and if the citizens of Amesbury would subscribe to a certain amount of stock the industry would be located here. There were many places that wished to secure the industry and would offer them concessions. Not only would they build automobiles but also gasoline launches using the same motor that went in the automobile.

Mr. Spiller spoke next and explained fully about the machine, two photographs of which he exhibited. It was built with an equal distribution of the weight on all four of the wheels which was an improvement over many of the machines where two thirds of the weight was on two of the wheels. This was much easier on the tire and did not require such a heavy one as others. This also made the machine ride easier and so steady was it a glass of water would hardly spill placed in the bottom. There was also large storing capacity under the seat for touring parties. The machinery was very easily got at by lifting a trap door in the bottom. It was controlled by practically one steering rod being very easily handled. There was an automatic distribution of the oil. It was a gasoline motor and had run on a test 100 miles with five gallons of gasoline. The motor was independent of the body which could be taken off and an express body or any style of a

body placed on it. The motor weighed 275 lbs. for the eight horse power and about 100 lbs. more for the 16 horse power. The 8 horse power machine weighs 1800 pounds.

They had given the machine a very thorough practical test running the one on exhibition at the Mechanics Fair 2000 miles, it would take as high as an eleven per cent grade at full speed. The motor before it was put into the machine was run a whole week day and night and stood the test to perfect satisfaction. They wished to build 200 machines the first year of 8, 16 and 24 horse power. There seemed to be a demand for 16 horse power rather than 8. The price that the machines were to be sold for was \$1800 for 8 horse, \$2400 16 horse and \$3500 24 horse.

They wished to build the whole machine throughout excepting the rubber tires at their own factory and to sell direct to the buyer through their own agents.

In addition to manufacturing the automobiles they had found that their motor was perfectly adapted to using in launches and the same machine that was put in the automobile could be placed in a launch and work much better than many now in use. An eight horse power motor would easily take care of a 25 foot launch. They proposed to build launches also for which they knew there was a large demand.

They had the patterns and drawings and were already to go ahead and build machines just like the one they now had on exhibition which they considered a perfected machine.

There were a number of patents secured which covered different parts of the machine.

At the Mechanics Fair the machine had attracted more at-

tention than any of the machines there it seeming to be just what was wanted. There were a number who were waiting until the Fair was over so that they could try the machine and if it proved all that was recommended they would order one. There was no doubt about there being a good demand for them.

Dr. Cooper said the question had been asked in regard to whether there was a demand for a machine and gave his experience of the past eight months as an arawer. He had run his machine 3000 miles during the time and it had only cost him \$28 for all expenses of gasoline, lubricants, repairs, etc. One gallon of gasoline would run his machine 20 miles the same as Mr. Spiller claimed for the B. & A. and that of course would cost no more. He had figured it down to 24-25 of a cent per mile and he averaged about 15 miles per day at a cost of 12 cents. During the previous year 1901 he had paid over \$200 to the stable keeper for board of his horse and \$30 to the blacksmith for shoeing. His automobile had not cost him to run eight months as much as it did for shoeing his horse. He thought such a showing as this would make a demand for the automobile.

Mr. Patten said that the industry would employ at least 150 men of whom 75 would be first class mechanics. This would mean 40 or 50 new families in town and with the pay roll each week would be a great help to the town.

Quite a number asked questions in regard to the matter which were all fully answered.

R. E. Briggs spoke very favorable of the new industry and thought the town should secure it.

Amesbury Daily News, October 28, 1902, pg. 2

Harry Allen Spiller (1862-1943)

5/31/2022

Harry A. Spiller was born to Charles E. Spiller, a Boston gas-fitter, and his wife, Helen, being listed as a draftsman in 1887 when he married Adeline Barnes. He had patented the previous year a system for powering large movable gun emplacements (USP 339,589) by means of pneumatic cylinders, for which papers had been filed in January of 1886 when he was only twenty-six years old. He was employed by the South Boston Iron Co. (that dated back to 1817), which was a substantial cannon foundry. Three more large-gun patents were issued through 1892, all being assigned to makers of pneumatically powered guns. During late 19th century a William P. Hunt was President and Treasurer of the South Boston Iron Co. and in the 1890s this became the Hunt-Spiller Manufacturing Co. where Harry A. Spiller was billed as a mechanical engineer. He was apparently both mechanically talented and entrepreneurial.

Sometime in the late 1890s automobiles became such a compelling interest for Spiller that during 1900 he was a principal behind an auto-related New Jersey venture called Pringst-Spiller (see Boston & Amesbury related quotation from the *Standard Catalogue* on a previous page). That apparently faltered quickly, such that his automobile efforts returned to Dorchester, Mass, where his and his father's families lived near each other. Involved was a unique vehicle of his own design. Engines were acquired from an outside manufacturer, as a number of the other drivetrain components probably were.



Hunt-Spiller letterhead showing a 66-ton pneumatically powered “disappearing” gun emplacement

The Spiller Motor Carriage Company, 1900

SPILLER — Dorchester, Massachusetts — (1900) — The Spiller Motor Carriage Company was headed by Captain William Jacques Spiller II, late of the United States Navy. His automobile arrived during the early fall of 1900. "This trappy little vehicle is worthy of special note," wrote *The Motor Vehicle Review*, "because of its many original features both structurally and of design." Most significant of these was its bi-motor, two air-cooled Aster 2-3/4 hp engines mounted on the frame and connected individually by chains to the front driving wheels. "Of course, this double motor equipment adds considerably to the complication of the vehicle," the magazine went on, "but Mr. Spiller considers the obvious advantages of his system to more than balance this objection." Probably it did not. This automotive venture seems to have been of only a year's duration.

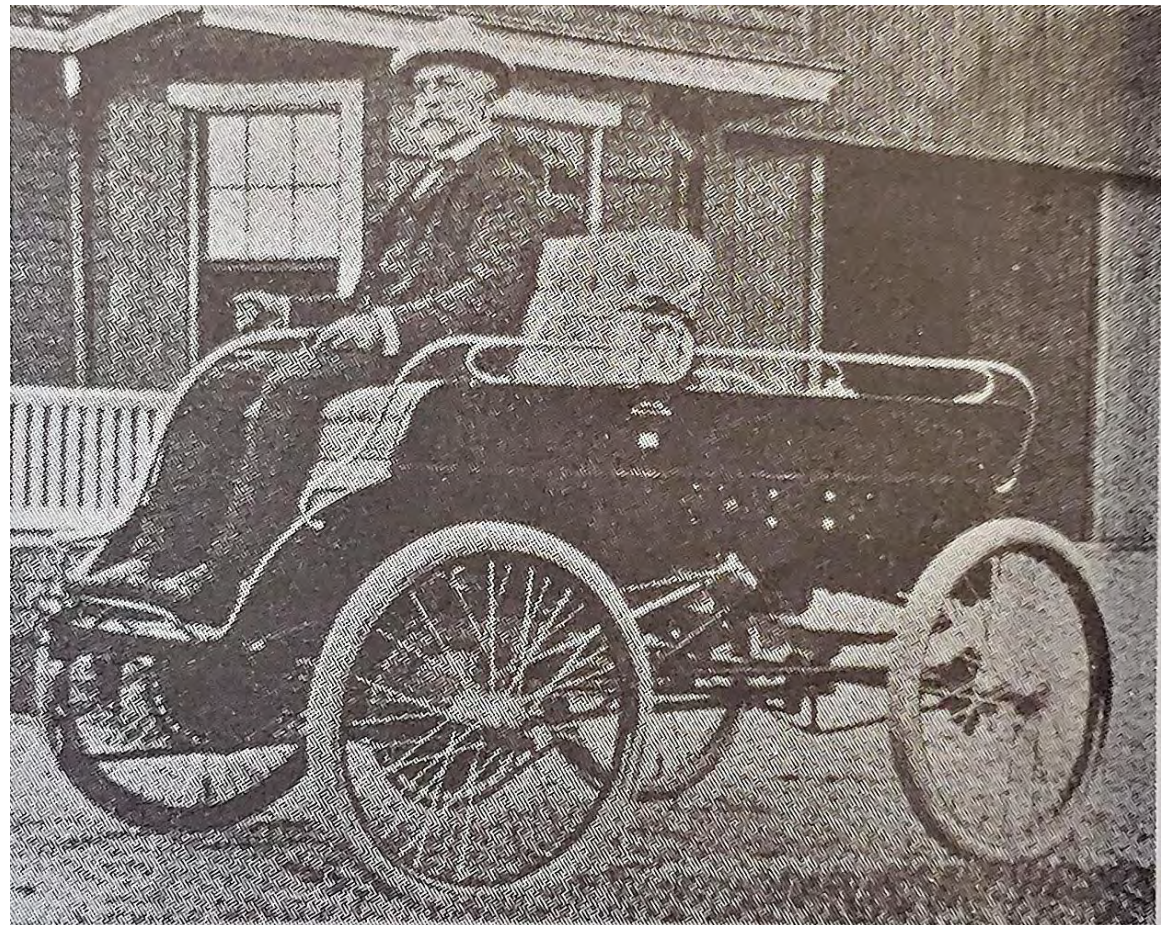
Standard Catalogue of American Cars, Beverly Rae Kimes & Harry Austin Clark, Krause Pubs. 1996, pg. 1368

No "Captain William Jacques Spiller II" (above) has been identified anywhere, and this is a Harry Spiller venture, as seen below advertising the engines for sale in 1901. Chain sprockets for both front wheels are seen in the photo. Harry would have been only thirty-eight in 1900, so that the gentleman may be his father. "Trappy" in the above description refers to an 1890s carriage style called a trap.

FOR SALE.— Two 2½ H. P. air cooled Aster Motors with Longuemare carburetors, spark coils, batteries and mufflers in perfect condition. Immediate delivery to first cash customer. Address,

H. A. SPILLER,
42 Gibson Street, DORCHESTER, MASS.
The Horseless Age, March 6, 1901, pg. 35

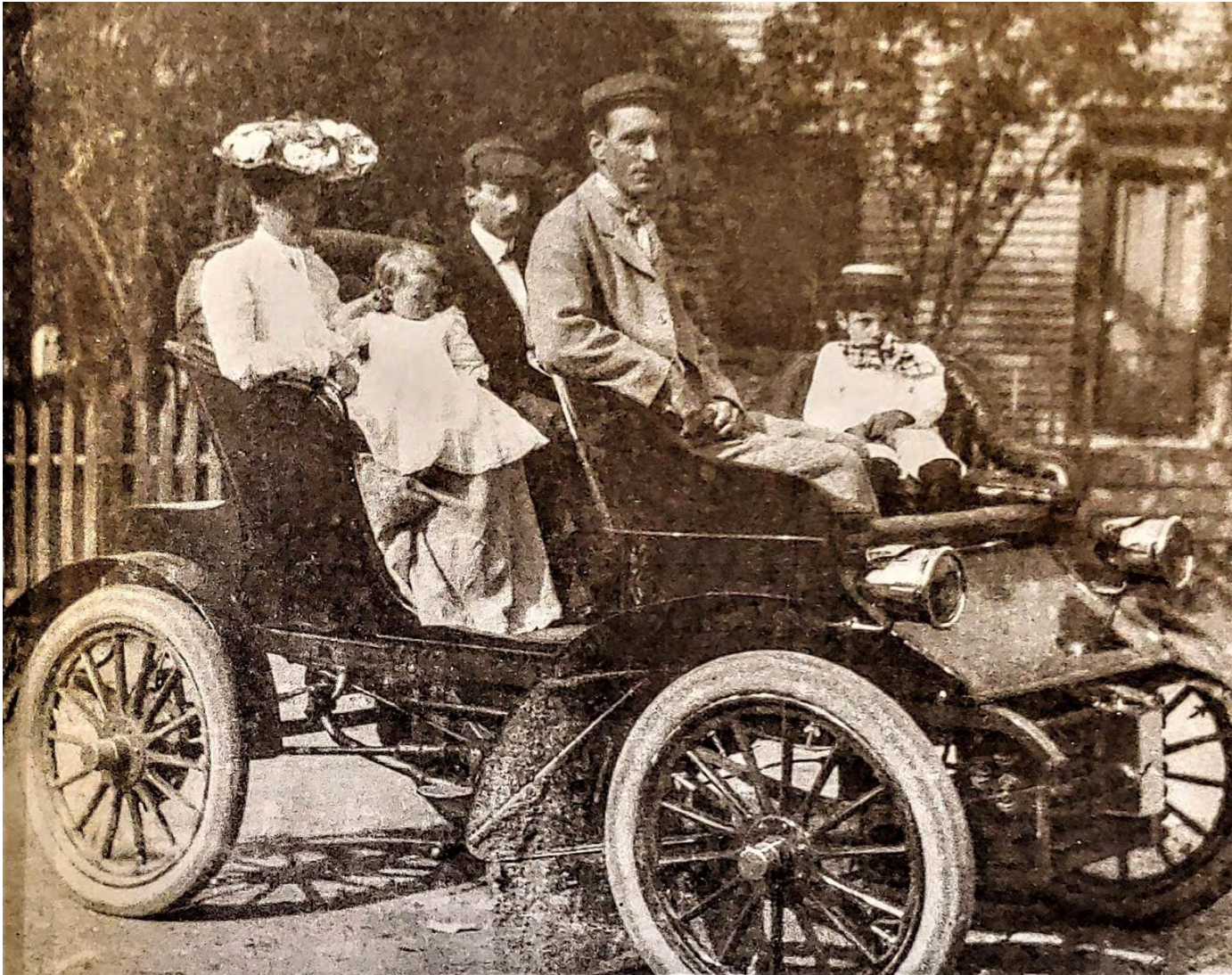
The independently driven front wheels, with side-chains, were not capable of steering. The tiller appears to operate a crank below the body, attached by a long linkage rod to a rear axle crank, performing rear wheel steering.



Standard Catalogue of American Cars, Beverly Rae Kimes & Harry Austin Clark, Krause Pubs. 1996, pg. 1368, text and photo

Boston & Amesbury Mfg. Co. Automobile

5/31/2022



Note – Text below is quoted from the original magazine caption. “Mr. Oswell” was Israel Orswell, who was not a chauffeur but rather the engine builder and drive-train mechanic for these autos. Also, there were four Miller brothers in their carriage company.

This vehicle has larger headlights set further up front and the more fully developed front seat compared to the auto seen previously, and a permanent installation rather than stowable.

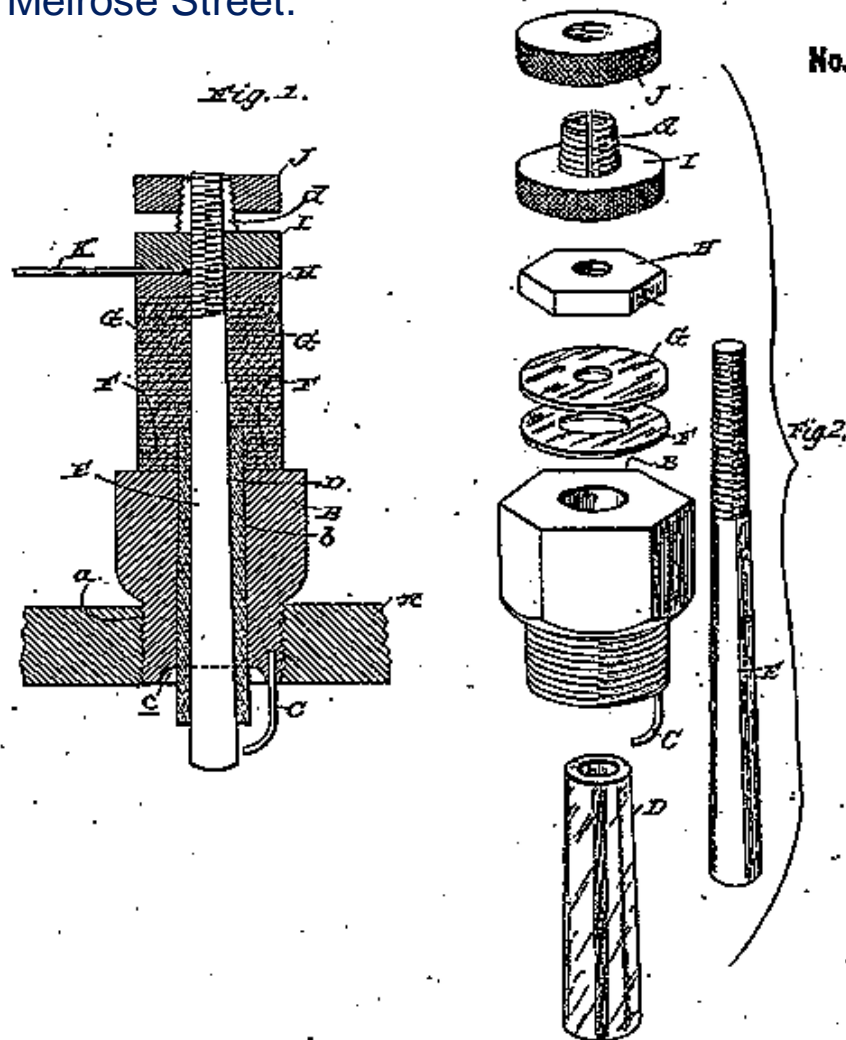
“This experimental automobile was driven from the rear by the chauffeur, Mr. Oswell, Mrs. Oswell sits nest to her husband in the back with their daughter on her lap. Their son is in the front next to John Miller Sr. The car was one of three produced at the Miller brothers’ plant, but the car was never manufactured for sale. The Miller brothers’ firm was made of three brothers who had each worked for different firms and had lost their jobs due to the great fire of 1888. They combined their talent and stayed in business until 1907.”

Images of America – Amesbury, Pamela Murch Stevens, pg. 51, text and photo

Israel Cheney Orswell (1872-1952)

5/31/2022

Israel Orswell's family was from around Bristol County, Massachusetts and nearby Portsmouth, Rhode Island (near Middletown & Newport). By 1900 he had a wife and two young children and was working as a machinist in Fall River, where he had married in 1895. He had not attended high school but seems to have absorbed a technical background in his various jobs. In 1901 he had moved up to Cambridgeport, across the river from Boston, where he patented a spark plug (below). He was not in the 1902-3 Amesbury directory, having apparently just arrived. He was in the 1904 directory, the year his last child, Kenneth, was born in Amesbury, renting at #1 Melrose Street.



No. 687,648.

Patented Nov. 26, 1901.

I. C. ORSWELL.
ELECTRIC SPARKING PLUG.

(Application filed Jan. 3, 1901.)

Orswell's spark plug was a threaded assembly of machined components, plus an insulator of stacked mica disks. This is the "jump spark igniting system" having "the Orswell "perfection plug" of his "special invention and manufacture" reported in announcing the Boston & Amesbury Mfg. Company in 1902. Within a few years, Orswell would return to spark plugs, and to Boston.

Another article* refers to patents related to the Boston & Amesbury automobile, but only this one has been found from Israel Orswell, Harry Spiller, or anybody else.

* Amesbury Dailey News, October 28, 1902, pg. 2

Miller Brothers and Boston & Amesbury Relocation

The Miller brothers moved two separate businesses to two new locations in 1903. The Boston & Amesbury Manufacturing Company went to the "Electric Light Building" that still exists as townhouse condominiums at the bottom of Oak Street. This factory was powered by electricity from Wm. G. Ellis's power plant below the factory on the river flats. This is shown as making automobiles on the 1904 Sanborn map, seen on the 2nd following page.

Carriage making, minus brother John, went to a powered factory on Water St. then owned by Biddle & Smart, seen on the 1904 Sanborn Map, 3rd following page. It is marked there as having "Miller Brothers, carriages in the white" in part of the building, along with Carr Prescott & Co., carriage wheel makers, who had taken over the Biddle & Smart wheel-making department.

A BIG NEW INDUSTRY SECURED FOR THE TOWN

Stockholders of the Electric Light Co., Voted to Sell Large Brick Mill and Wooden Factory to the Boston & Amesbury Manufacturing Co.--They Will Take Possession on April 1st.--Expect to Have 150 Men at Work in a Short Time--Automobiles and Gasoline Launches to be Principal Product.



THE TWO BUILDINGS AT THE REAR ARE THE ONES PURCHASED.

Amesbury Dailey News, March 28, 1903, pg. 3

- See text of article on next page ●

The unfortunately poor picture at left shows both the Oak St. factory and the electric generating plant below it along the river. There exist few images of the power plant, see Howarth & Rogers section in later pages.

The special meeting of the stockholders of the Amesbury Electric Light, Heat & Power Co., Friday afternoon was one of the most important ever held in this town. The action of the meeting clinches the arrangements and negotiations that have been going on for several months past and secures for the town a new industry that promises great things.

By a unanimous vote the stockholders voted to sell the large three story brick mill occupied by F. S. Merrill and until recently, James N. Litch, also the wooden factory building connected with it at rear on Oak street to the Boston & Amesbury Manufacturing Company.

It also includes the land in width from Oak street to the middle of the spur track that goes between the brick mill and Electric Light plant broadening out to the Powow river on a line from the rear end of the brick mill; in length from the B & M. tracks to the property of the late E. S. Lane of which they have an option and when purchased will give Oak St. frontage from the B. & M. bridge to the Powow to the land purchased there is nearly as much frontage that the Company secures on the Powow as that left for the Electric Light Co.

The Boston & Amesbury Mfg. Co., are the manufacturers of the Automobile to which we have referred so favorably many times also the new

gasoline launch and the location is ideal for their business.

The sale of the property has been effected through the President, H. A. Spiller, the Treasurer, John Miller and the Secretary, R. G. Patten. Mr. Spiller came here a week ago and with the other officers put in several days with the officials of the company in perfecting the arrangements for the sale which have been all drawn up and signed so all that remains to be done now is to have the papers passed and the Company will take possession of the property next Wednesday, April 1st.

Already considerable machinery has been purchased and will be at once sent here and set up. It is the intention of the officers to have 160 men at work inside of two months if they can get the machinery up and ready to work. If their plans materialize as now looks possible inside of three years they will have 300 men at work in their new plant.

It is the intention to make quite extensive repairs on the building laying out several thousand dollars. A foundry will be established in connection with the plant to make their own castings. The wooden building at the rear of the brick one will be used for the present in getting out the boats, Howard Bartlett now being at work there, but a brick building to

connect with the large building will be erected in the near future.

The company already have large orders for their gasoline launches and automobiles. In addition to these important products they also contemplate turning out other things having a charter to do a general manufacturing business.

A large number of first class machinists will be brought here to work moving their families here and they intend to give the local people a chance to learn the business of machinists being an excellent opportunity for our young men.

Mr. Spiller the president of the company will be here Monday and will then make more definite arrangements about going ahead.

The machinery now in the Miller Brothers' plant will at once be removed to the new plant and installed.

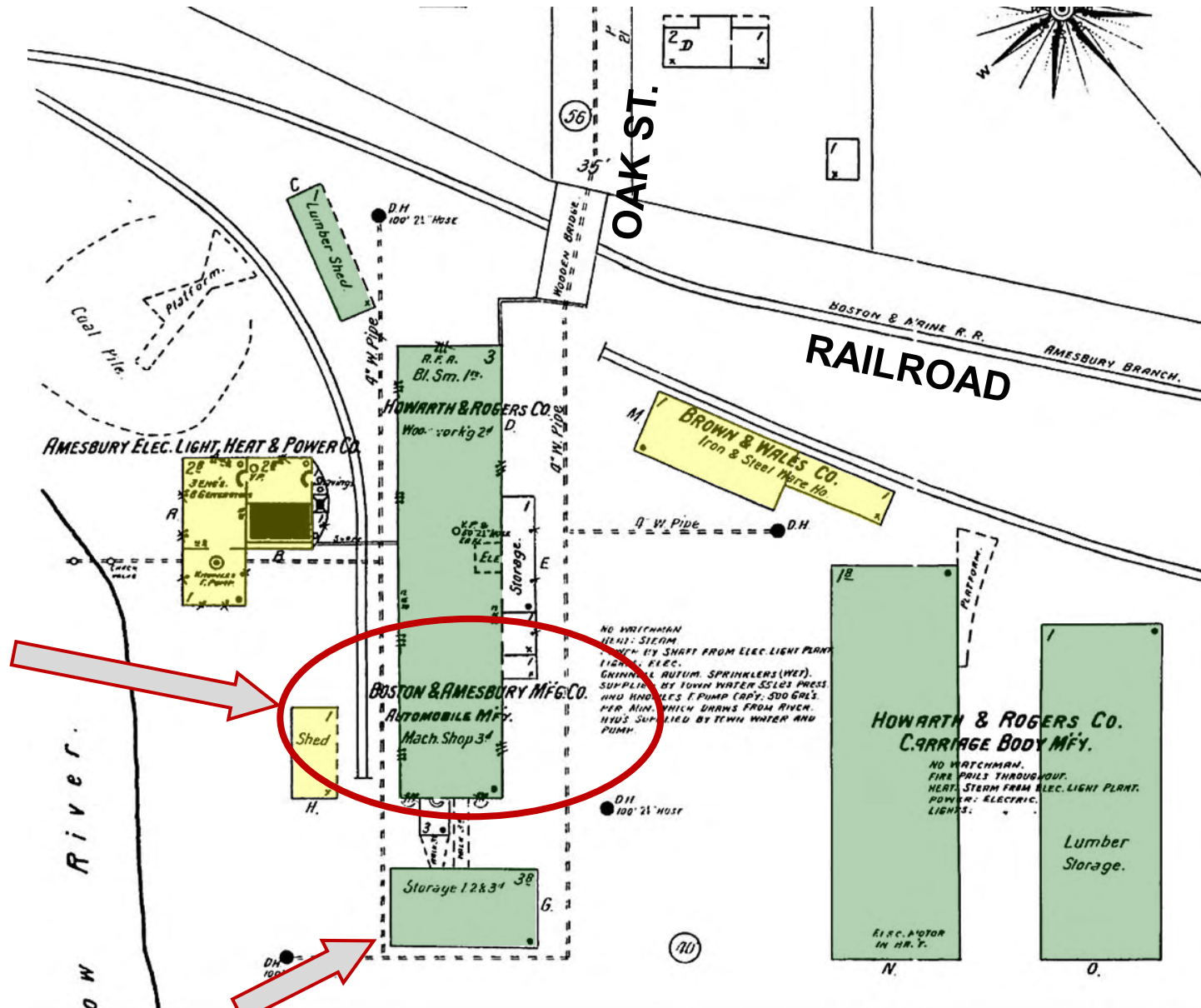
By the arrangements of the sale the company will take all of their power, heat and light from the Electric Light Company, making a large customer for them.

The company is capitalized for \$250,000 and has issued \$100,000 of it which gives them a good working for capital their present needs.

The securing of this new industry for the town at this time is a great encouragement and should show to our people that the town is not going to the wall as some have feared.

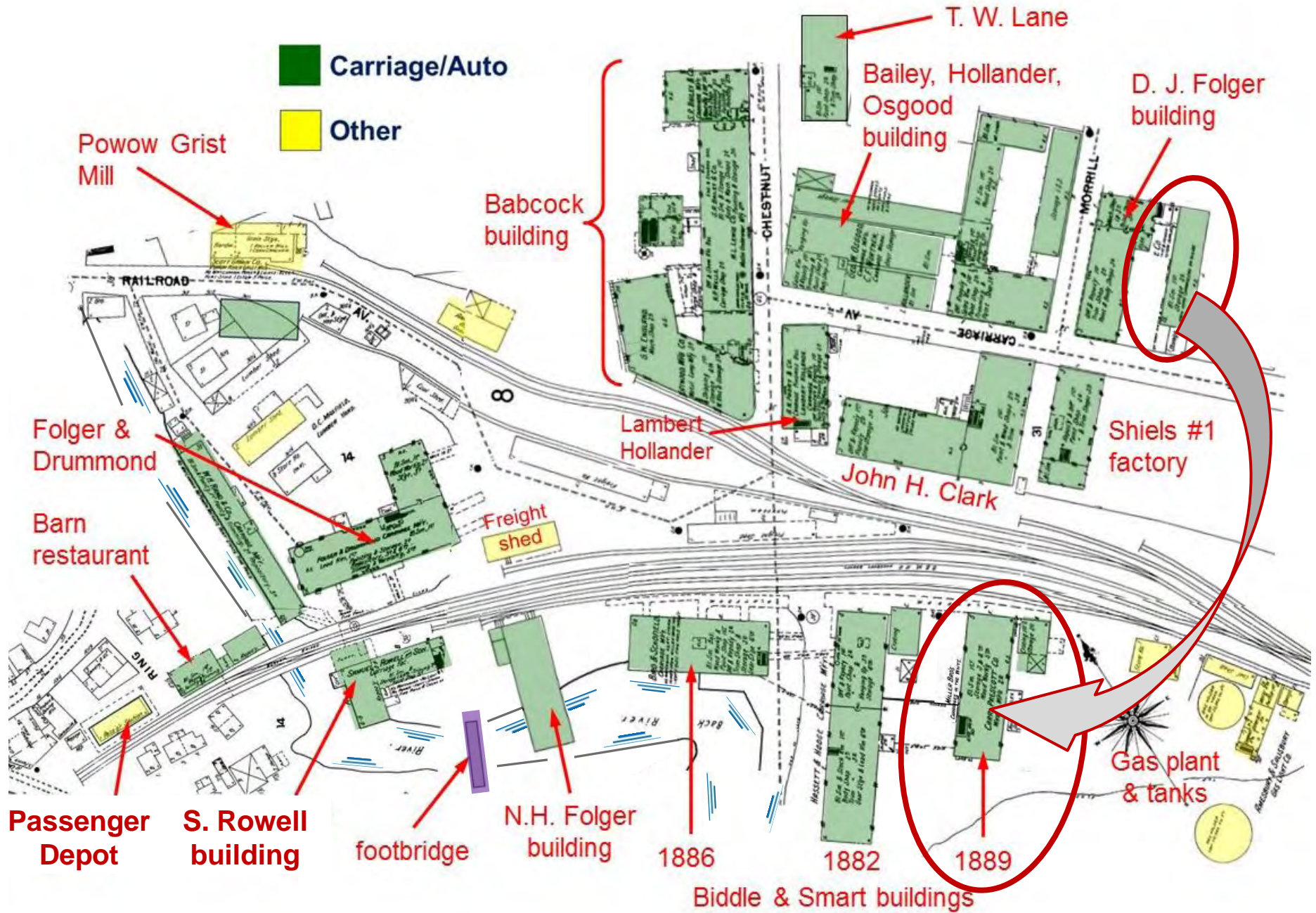
Boston & Amesbury Mfg. Company, Oak Street 1904 Sanborn Map, sheet 15

5/31/2022



This extension was intended for building motor launches, later becoming the 1908 location for assembling the Graves & Congdon Crown automobile.

Miller Brothers carriages 1903 move from Oakland St. to Water St.



Establishing the Oak Street Factory

Something happened on the way to the factory, raising questions as to how much actually came to fruition. Newspaper reports outlined a large undertaking, including building renovations, installation of a casting foundry, setting-up of extensive machinery, employing 150 workers within a few months, and making motor launches as well as automobiles. Motor launches were a new enthusiasm in town that would increase pressure on the company's engine production. Complementing the machinery was attracting a correspondingly "large number" of experienced machinists to this isolated and still-rural community to operate the factory.

Factory workflow was well understood from the likes of making clocks and sewing machines, where knowledgeable foremen were valued at 3X the average wage. (Several Amesbury sons were prominent foremen in American watchmaking, which had originated in Boston.) The task ultimately demanded detail drawings of all components to be made, and planning of individual machining steps for each dimension in specific machines to assure a smooth flow of parts and assembly. Required numbers and types of machines to be ordered, and employees to be hired, could not have been estimated without some realistic amount of production planning. The overall magnitude may have discouraged investors, being as there was no such previous experience in town, few current local resources for accomplishing it, and fewer "Plan B" options for such a facility should the company falter. Chartered for \$250,000, only \$100,000 had been paid into the enterprise, as the inflow of qualified machinists and dollars may have stalled.

A second Miller-family plan for the factory* was the Climax Ignitor Company, their products appearing in trade journals by early 1904.** From Amesbury city directories, issued in alternate years, Climax principals John Miller Jr. and William Miller (2nd generation Miller brothers carriage makers) were still carriage makers in 1902. In the 1904-5 directory, John Miller Jr. was president of Climax, while William Miller was a foreman. Another foreman was Israel Orswell, seemingly freed from automobile engine-making and back working with spark plugs. Climax was making two very different products, only vaguely connected by having some relationship to electricity, further suggesting that Orswell's background may have been instrumental in both.

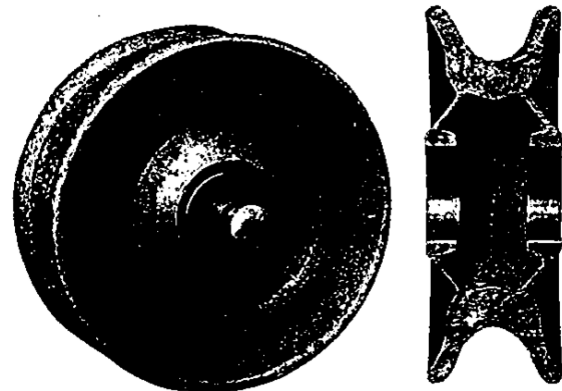
* *History of Carriage Manufacturing and Auto Body Building*, typescript, 1955, John J. Allan, pg. 73

** *The Gas Engine*, Vol. 6, Jan, 1904, pg. 382

The Climax Igniter & The Copper Alloy Wheel

Climax igniters eliminated exterior high voltage wiring by placing that technology within the large ignitor shell, preventing wiring shorting to the engine block because of moisture or cracking. Complexity resulted in a price of \$7.50, about 2-3 day's average wages. The advert was supplied by a spark plug enthusiast without a citation, so source & date are unknown.

The second Climax product was a cast copper-alloy 4-inch diameter wheel and axle pin connected to poles atop electric trolleys to roll along overhead electric power lines. Electricity traveled through these to the trolley motor. Described in detail in 1905*, mechanical wear and electrical arking damage had been causing daily changes of existing types of these. Israel Orswell was certainly working with the igniters, while foreman William Miller was likely involved with the cast copper wheel components. Cast wheels suggest that the factory had built their foundry. Activity at Climax Ignitor Co. could have continued into 1906, but the 1906-7 directory placed John Miller Jr. as foreman at the Powow Foundry Co. while William Miller was foreman at the Amesbury Brass Foundry Co., the casting operation established in 1903 by Biddle & Smart.



* The Street Railway Review, 1905, pg. 260

A Climax Ignitor Co. listing in the 1909 *Motor Cyclopaedia Year Book* (pg. 170, and likely out of date as the company probably did not then exist) claimed they also made magnetos and ignition dynamos.

THE CLIMAX IGNITOR CO. AMESBURY, MASS.

IGNITION PERFECTED

NO INDUCTION COIL
NO SPARK COIL
NO SPARK PLUG
NO HIGH TENSION WIRES

NO OILING
NO ADJUSTMENT
CHEAPEST
SIMPLEST

SUREST
RESULTS
WATER
PROOF

INTENSE
SPARKS
LIKE
ELECTRIC
FLAME

FINEST
MATERIAL
AND
WORKMANSHIP

50 PER CENT.
SAVING IN
BATTERY
CONSUMPTION

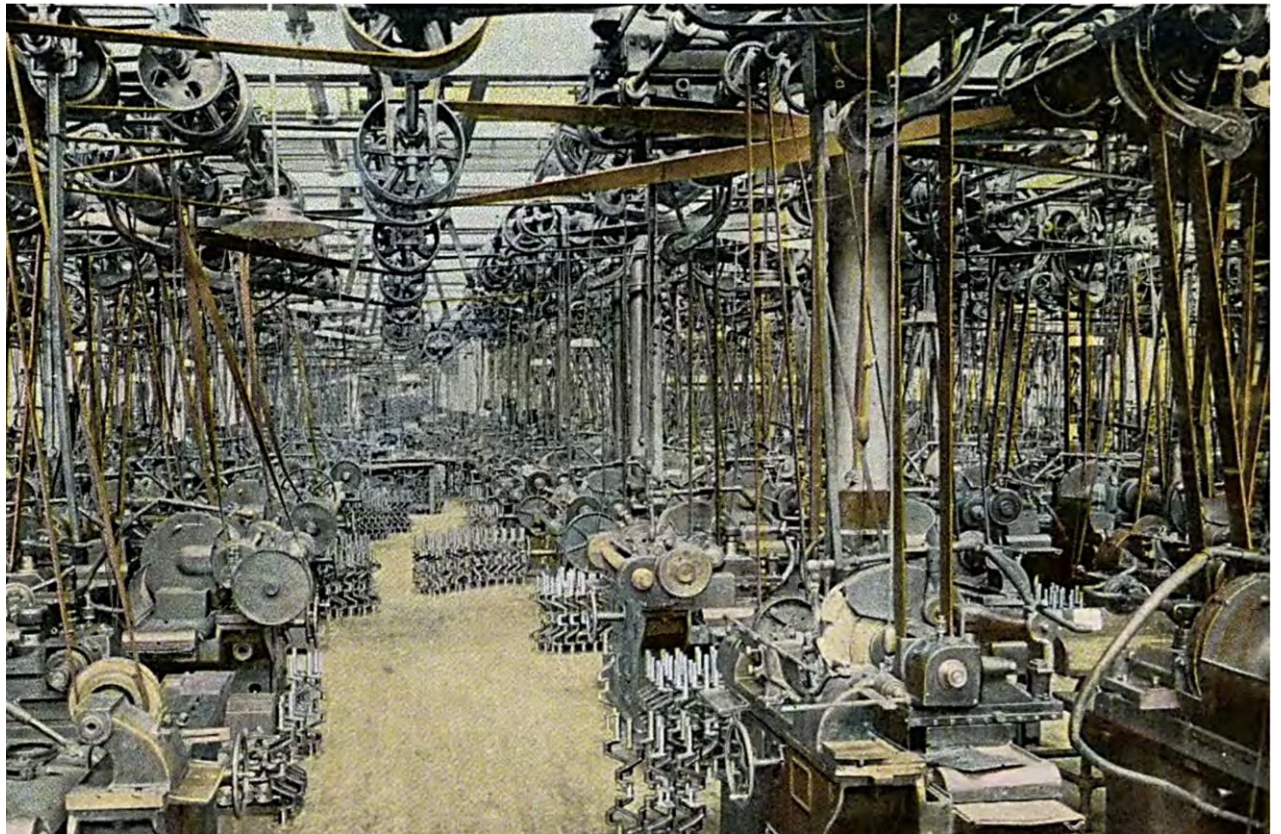
\$7.50,
EXPRESS
PAID



What Happened to Boston & Amesbury Mfg. Company?

Of few Amesbury machine shops, the textile mills had a large shop to maintain their hundreds of machines. Also, S. R. Bailey had developed considerable machine capability for his carriages, as had Biddle & Smart. Others, such as those of George England and Enoch Osgood, were mainly job-shops having no standard products. It was thus precarious to plan on sophisticated serial automobile production given the local lack of resources and experience.

Nothing was heard of the company after mid-1904, likely because the scope and cost of manufacturing was overwhelming, especially on such a tight schedule. In addition to the large number of required machines and machinists there would have been numerous tools, fixtures, and gauges needed to firmly and precisely locate components in the machines for specific operations and to measure the results. If producing their custom-designed engine proved impractical, there may have been no available alternative because the vehicle, and especially the chassis, was likely designed around that specific engine. Consequent vehicle changes would thus be needed, and once staffed, delays would have begun devouring payroll dollars. It would have been easy to underestimate the task, and even easier with added motor launches, for which they had already begun planning and staffing.



Ford crankshaft shop, 1917

Spiller and Orswell After Boston & Amesbury Mfg. Co.

Little activity appears for Harry Spiller after the Boston & Amesbury episode. At right is a 1914 advert for his invention of small rubber separators to be placed into automobile leaf-spring suspensions. These act as dampers and prevent individual leaves from rubbing and wearing against adjacent leaves.

Below is a 1912 advert advertising drawings, casting patterns, and parts for the Boston Amesbury engines, in that the description generally fits known details. Having developed the engine, he would have had the drawings, patterns and hardware.

By 1906 Israel Orswell was in Boston with his own ignitor company, making a very similar spark plug to the Climax. He then lived in Quincy for a time, but by 1930 was in Los Angeles, billing himself as a mechanical engineer and having accumulated a number of patents.

FOR SALE—Patterns, drawings and parts for 4 x 4 water-cooled, opposed motor; just the equipment for light delivery wagon. H. A. SPILLER, 83 Kenwood St., Dorchester Center, Mass.

Motor World Wholesale, Volume 31, 1912, pg. 56



THE SPRING **LASTS**

SPILLER'S
SPRINGEZE
TRADE MARK

ONCE USED **NEVER WITHOUT**

H. A. SPILLER COMPANY
83 KENWOOD STREET DORCHESTER CENTRE, MASS.

Spring resiliency plays a much greater part in the life of a car than is generally supposed, both in economy and comfort. If the resiliency is not correct, your tires wear too rapidly. The road wheels must hold the road. Every time they bounce off the surface the wheels spin or lag and there is tire wear and loss of power. By preventing this, proper spring resiliency becomes a vital factor in reducing tire wear.

The constant use of Spiller's Springeze gives you the full resiliency for which your springs were designed. By actual test a power gain of 5% in small cars and 8% in large cars has been shown.

Spiller's Springeze has proved to be the cheapest and most efficient shock absorber on the market. But even where shock absorbers are used the springs will need this Springeze to allow them to perform their proper function. Has been thoroughly tried for two years. The only material that gives satisfactory results with steel leaf springs. Makes and keeps the surface of the steel smooth, which allows the spring to do its natural work. Your vehicle will ride 50 per cent. easier and reduces spring breakage to a minimum. Does not have grease, graphite or grit annoyance. Does not soil the hands.

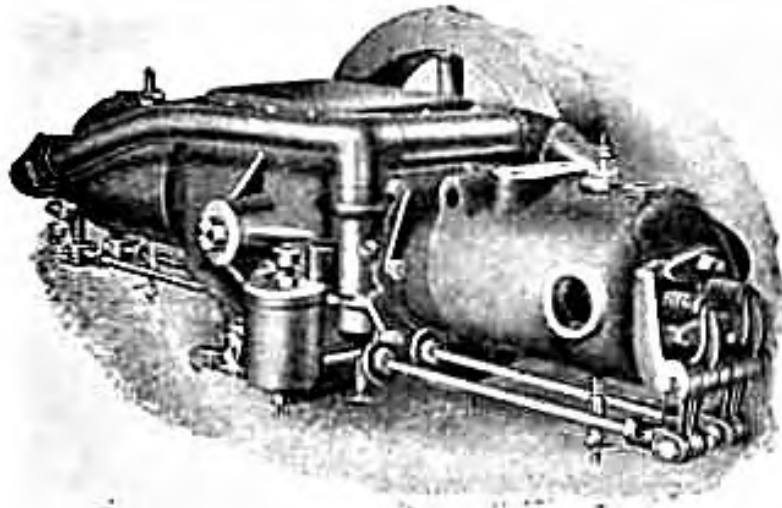


The cut shows how to place Spiller's Springeze in your springs. It is not necessary to take load off springs. Use a sharp, hardened screw driver or spring leaf spreader to open ends of leaves. Not affected by water or oil. Can be placed in two semi-elliptic spring car in fifteen minutes.

PRICE 50 CENTS PER BOX. For Sale by Leading Dealers or Sent Prepaid

H. A. SPILLER CO., 83 Kenwood St.
DORCHESTER CENTRE, MASS.

Motor Magazine, Volume 23, 1914, pg. 152



**ARE
YOU SUCCESSFUL?
YOU
WILL BE
IF YOU USE THIS
ENGINE
IN
THE CONSTRUCTION
OF YOUR CARS
NEED
YOU WAIT?
LET US KNOW YOUR
REQUIREMENTS**

The Buick 12 H. P. Motor

We also Manufacture Transmissions of Planetary and Sliding Gear Type ❦ ❦ ❦

THE BUICK MOTOR CO., Manufacturers of Automobile, Stationary and Marine Engines
FLINT, MICHIGAN

from Royal Feltner's website, earlyamericanautomobiles.com,

The above shows that aspiring automobile makers could purchase motors and transmissions from Buick Motor Company. As had happened in carriage making, auto producers could assemble vehicles from purchased components. A car company's vision may not have been heavy manufacture, but to assemble a particular style or fashion of automobile that would appeal. Automobiles were still very expensive, so that planned production might have been low and intended for a relatively small geographic area, as carriages generally had been.

Proposed "Monroe" Auto Company, 1905

It was reported that an Amesbury automobile company was proposed in August of 1905 to manufacture a 15-horsepower car from the designs of Chas. H. Monroe¹, a "well known mechanical engineer". The story, picked up in *The Horseless Age* of August 1905, had likely originated in this *Amesbury Dailey News* article at right.

Charles H. Monroe, of Searsport, Maine, had made a splash in 1900 by proposing to build a 6 HP steam powered runabout in Belfast, along the Maine coast, that would sell for \$500². Involved in the venture was a Mr. Grinnell, also of Searsport, and "two Boston men". Nothing came of that venture.

This 1905 article briefly discussed a "semi-flash" boiler, suggesting another steam engine motor. The engine apparently had two years of experience in both an automobile and a power launch, the company proposing to build both (a theme also seen with the Boston & Amesbury Mfg. Company).

Made clear in the article is that company representatives were in town to find a suitable manufacturer for their auto body, all other mechanicals having already been developed and planned. No indications are found that vehicle manufacture was intended for Amesbury, nor that anything was ever manufactured at all.

1) from Royal Feltner's website, earlyamericanautomobiles.com, in which the report's origin is not stated. Much of the site's material is from online reproductions of period trade journals.

2) *Standard Catalogue of American Cars*, Beverly Rae Kimes & Harry Austin Clark, Krause Pubs. 1996, pg. 992

NEW AUTO CO.

**Representative Here to See
About Bodies.**

Representatives of a new automobile company were in town yesterday seen about to having the bodies of their auto built here. They are to use the Monroe engine, a new engine that has been patented in this and the principal foreign countries. The engine has been perfected by Charles H. Monroe a well known mechanical engineer and has been perfected principally for use in automobiles and power boats.

Its utmost simplicity is the greatest feature, the complete engine consisting of less than one half the number of parts required in other motors. Another strong point is the controlling gear which consists of one lever only.

Thorough tests of the Monroe engine have been conducted for over two years and with most gratifying results. The inventor and his constituents have had an automobile and a launch equipped with these engines for over two years with most gratifying results.

The company also have a generator or semi flash boiler, which makes one of the best combinations of this kind ever brought together.

The company propose to put an automobile of 15 horse power on the market for \$500.

The auto which they have built and has been in use for many months will be bought here soon for local people to inspect.

Amesbury Dailey News, 1905-08-22, Pg. 2, C4 bot.

Essex Steam Car Prototype by S. R. Bailey, 1906

“The Essex Motor Car Company of Boston¹ was incorporated during the spring of 1905 by Arthur Hovering, Lawrence Cushman, and Frank Branan for the purpose of building a steamer with a four cylinder single acting 15-20 horse power engine featuring poppet valves. Only one model would be offered at \$3,000, a side entrance tonneau on a 107 inch wheel base which resembled the famous Serpollet from France. Early in 1906, it was revealed that Essex had contracted with the Bailey Carriage Company of Amesbury, one of the largest carriage manufacturing plants in New England, for the building of the *Essex*. There were not many made before it went under. There are no known pictures of the *Essex*.”

Samuel R. Bailey moved into the Babcock building when it opened in 1889, it being a 600-foot-long five-story factory having a 150 HP steam engine. He worked into the carriage business during the 1890s making bike wheels and gears and developing the capability to manufacture complete assemblies. His signature vehicle evolved into a well-made “piano box” buggy on all-metal wheels and gears, with pneumatic tires. Bailey had drop-forging capability for axles and springs, plus machining ability for finishing precision journals and fifth-wheels. He was thus capable of completing the 1899 prototype electric automobile, using his wood lamination techniques in making the body. He was selling carriages complete, in the white (unfinished), or as sub-assemblies for other makers, prospering to the extent that he purchased the factory (the largest carriage factory in town and in the east) for \$150,000 in 1903.

Samuel R. Bailey was thus among the highly capable Amesbury shops to perhaps realistically approach automobile making. Beyond almost certainly making the *Essex* body, it is unclear how much else of the vehicle Bailey may have manufactured. A possibility is that the large factory space was simply convenient for automobile assembly, irrespective of where the components came from. With recession in 1907, Bailey shipped their last carriages² and they soon after went into full manufacture of their electric automobile, making more vehicles than any other Amesbury auto producer.

1) from Royal Feltner’s website, earlyamericanautomobiles.com

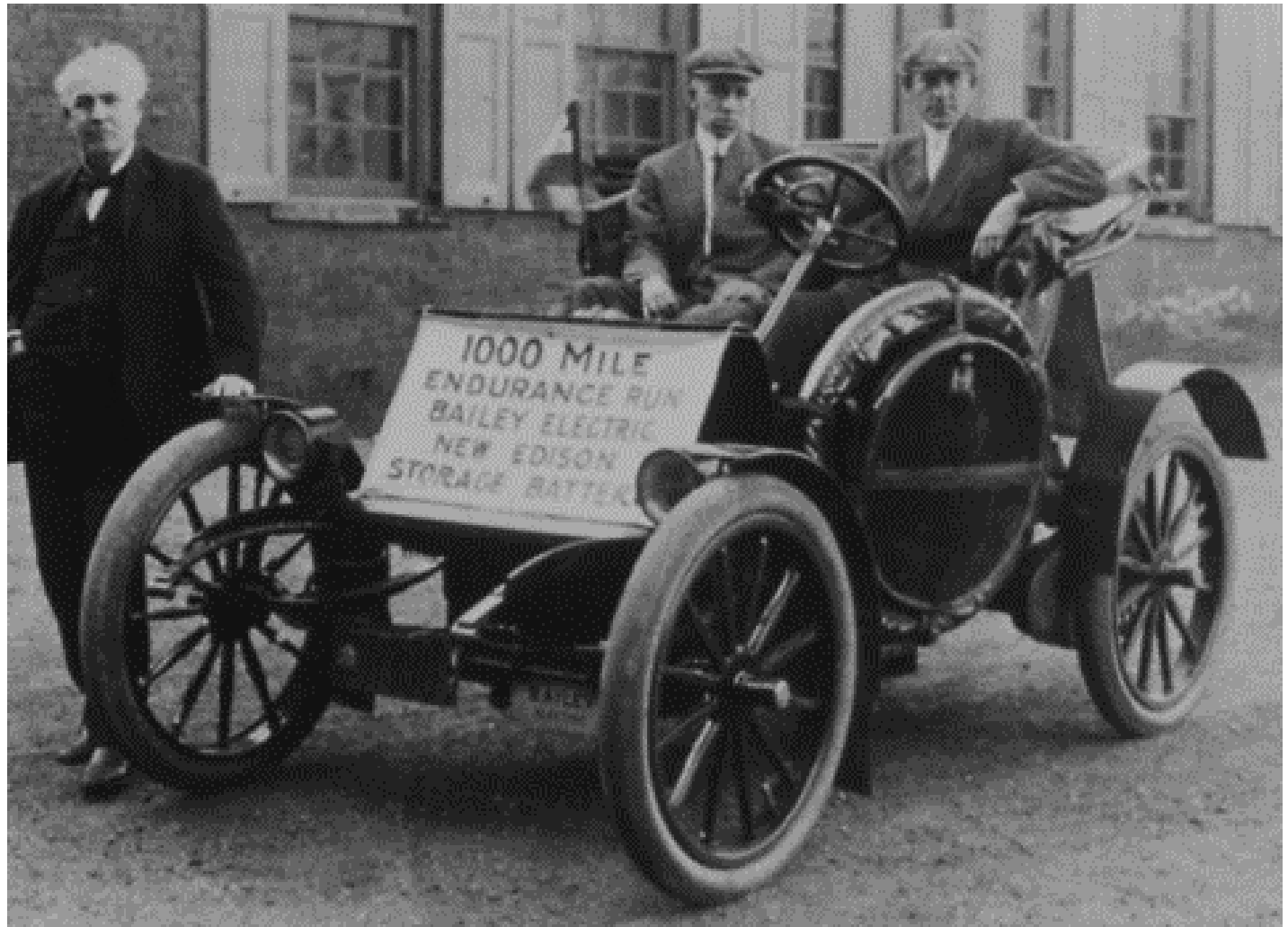
2) *History of Carriage Manufacture & Automobile Body Building in Amesbury*, John J. Allen, ca. 1955 typescript, pg. 32

Production of the S. R. Bailey Electric Car, 1908-1915

5/31/2022

Edison sought to develop automotive batteries and charging stations. Samuel Bailey's son had met, while serving in the Spanish American War, an Edison lab associate through whom he could pursue a proposal that brought the Bailey automobile to Edison's attention. Electric car batteries had generally been in accessible external boxes that consequently needed to be aesthetic. The Bailey company had wood-bending technology for making such a box as might be fitting for a period Victrola talking machine. Aesthetic function met need and the Bailey was a sound platform for developing batteries. The Bailey company began production of the Bailey Electric in 1908¹.

Bailey Electric Victoria Phaeton with Thomas Edison at his New Jersey plant



1) *History of Carriage Manufacture & Automobile Body Building in Amesbury*, John J. Allen, ca. 1955 typescript, pg. 32

The Bailey Electric Auto Co. by John J. Allen¹

At this time (1906) Colonel Bailey, seeking new lines to develop, met a man who was working with the Edison Electric Co. of Mount Orange, N. J., who had learned of S. R. Bailey's method of wood bending, called the "Square Bend", and hoped this construction might be adapted for use making Electric Storage Battery boxes. Bailey made a hurried trip to New Jersey, coming back with orders for the battery boxes, and part of the Bailey facilities were turned to making same. 1907 was a depression year, and in June the last carload of Whalebone Road Wagons, a consignment to the West Coast, was shipped, and Mr. Bailey turned his attention to building a vehicle to be run by electric storage batteries, and produced the "Bailey Electric Victoria Phaeton", equipped with the new Edison electric batteries that would run from one hundred and fifty to one hundred and seventy-five miles on one charge of electricity. "Fast enough and far enough" as advertised at that time. It was thought at this time that the advent of the Thomas Edison electric battery was likely to have a remarkable effect on the prosperity of Amesbury, as the S. R. Bailey Co. was the first vehicle builder to get in touch with Mr. Edison on the use of the same. The Bailey Co. kept in such close touch that when the battery was finally produced and ready for the market, they had the only modern pleasure car body ready for the market and had the honor of making all of the original road runs and tests with their machine.

In 1908 the people of Amesbury were invited to view in the Bailey factory "The first complete electric automobile to be shipped from here", which was the Bailey Electric Victoria Phaeton, and was to be exhibited at the Boston Auto Show of that year. Things seemed to be going along well, as, since January 1910, night and day shifts had been working in the Bailey factory. In the Spring, Mr. Edison himself came to Amesbury to confer with Mr. Bailey on the Edison battery. "The price of the Bailey is \$2,000 to \$2,600, depending on battery equipment." All through 1909 and 1910, the Edison Road Tests were conducted with the Bailey machine, which by August 1911 had been driven 11,000 miles. The Bailey cars with Edison batteries could run one hundred and fifty miles on one charge, and average a speed of eighteen to twenty miles an hour. In 1913 Colonel Bailey himself drove the new model Bailey Roadster, equipped with a General Electric Motor and sixty cell A-B Edison battery from Boston to Chicago.

Automobile registration in 1913, following the breaking of the Seldon patent by Ford, jumped to 1,250,000, but most of the expansion was in gasoline motors, and was not reflected in the Bailey business. In 1914, the year a rumored alliance between the Ford and Bailey companies came to nothing. October 1915 the Large Bailey factory was sold to the Biddle & Smart Co., and Samuel R. Bailey announced to the newspapers his formal retirement.

1) Excerpted from *History of Carriage Manufacture & Automobile Body Building in Amesbury*, John J. Allen, ca. 1955, pgs. 32-36

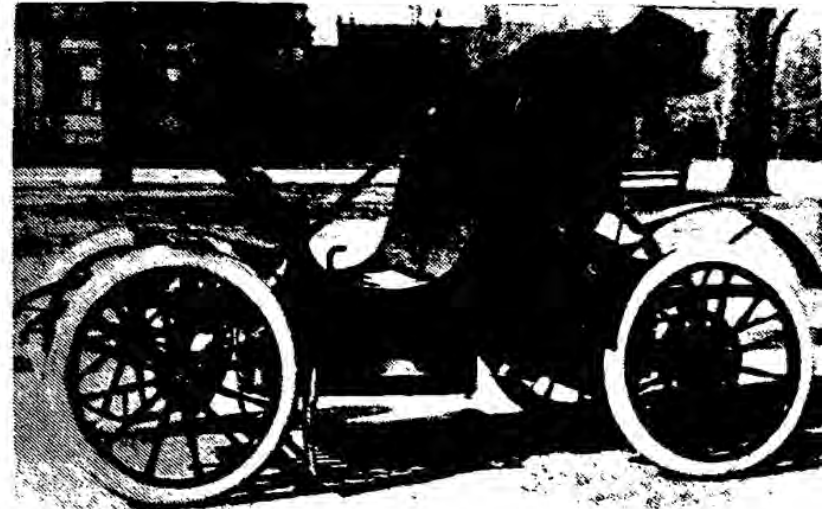
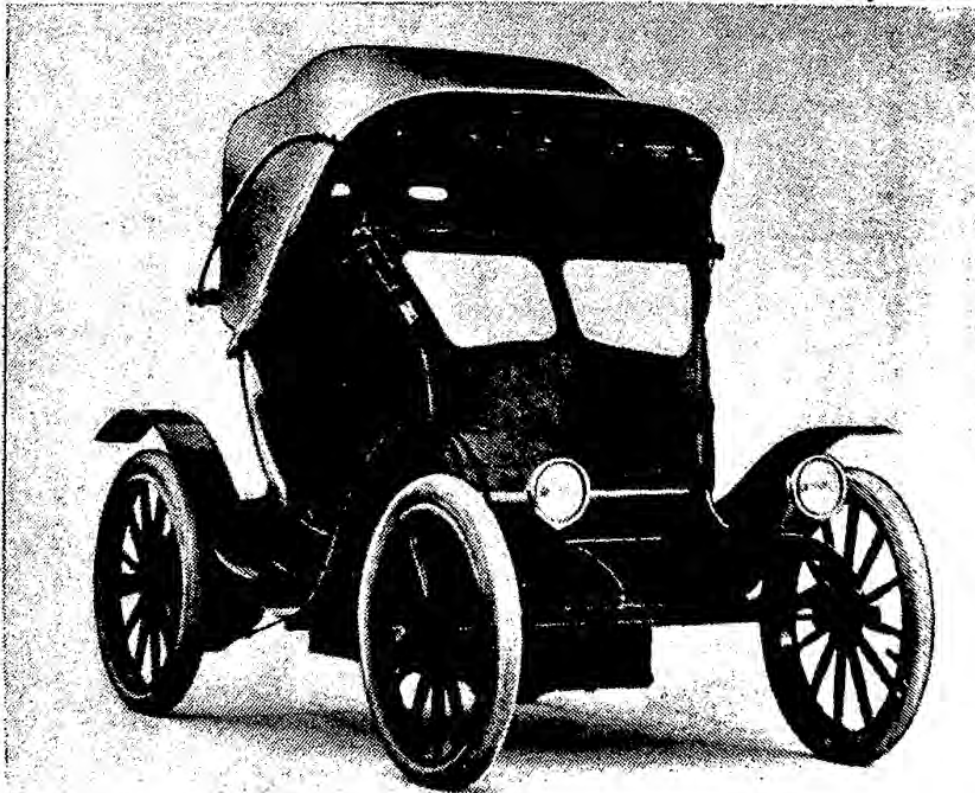
Production of the S. R. Bailey Electric Car, 1908-1915

Automobiles Built in Essex County Mass., Hayden Shepley, 1976, pg. 33, text and photo note that Bailey Electric production began in 1908 rather than as quoted below

The following Bailey Electric's were built in Amesbury from 1902-1915. The Ideal Ladies' Car. To the smallest detail this car has been designed and built to be the safe and convenient car for women to drive. Its ease of control, safety appliances, wide range on one charge of battery, together with its simple and rugged construction and comfortable riding qualities make it the ideal car for a lady to use when calling, shopping or pleasure driving. She can be independent of a chauffeur, stop when, where and as long as she pleases, is always assured of absolute control and is free from care as regards mileage.

For Winter or Storm Use. By equipping this car in the winter with a storm shield as illustrated, it can be made as warm and comfortable as a permanently enclosed car, while in the summer, without the shield, it can be as wide open as desired. Below left, Bailey Electric Victoria Phaeton, the

Ideal Ladies' Car.



1909 Bailey

Production of the S. R. Bailey Electric Car, 1908-1915

5/31/2022

Automobiles Built in Essex County Mass., Hayden Shepley, 1976, pg. 34, text and photo

The primary description, below left, is for the Light Service Car shown top left on the following page. Additional description, below right bottom, covers roadster and touring car variants designed around the long-wheelbase Model F, Bailey's other vehicle besides the Victoria Phaeton. While data is scarce, Bailey production is estimated between 150 and 450 automobiles.

This car is more particularly intended for the use of the telephone and electric light and power companies. It is equipped with a large box for carrying miscellaneous material, irons for carrying a ladder and a special, large swivelling search light which can be pointed in any direction. Standard gearing of this car is to 20 miles per hour on the flat, and the standard battery is 60 cells of Edison A-4 which gives on one charge of battery a mileage of 60 to 80. A battery of 60 A-5 Edison cells will give about 20 per cent more mileage.

Equipment: Top and side curtains; storm curtain; electric head and tail lamps; electric horn or other signal as desired; voltmeter; amperehour meter; Model C Stewart speedometer; special electric swivelling search light; ladder irons; box 32 x 23 $\frac{1}{4}$ in. and 16 $\frac{7}{8}$ in. high; charging cable and plug; full tool equipment, jack and tire pump.

Tires: 33 x 4 inch special electric pneumatic. Quick detachable rims. Tires guaranteed by the manufacturers of same.

Weight: 2550 lbs. with 60 A-4 Edison Cells. 2750 lbs. with 60 A-5 Edison Cells.

Prices: With 60 A-4 Edison Cells, \$2400. With 60 A-5 Edison Cells, \$2595.

F.O.B. Amesbury, Mass. USA

Terms: 10 percent deposit with order, balance on delivery.

Same specifications for the Light Delivery Wagon shown on left bottom. Inside Dimensions of Body for Delivery Wagon were Height 42 in., width 42 in., length 44 in., doors 30 in. wide.

The Business Runabout maintained on average roads with ordinary grades was far more convenient and more reliable in service than any gasoline car. Same equipment selling for \$2305. and \$2500.

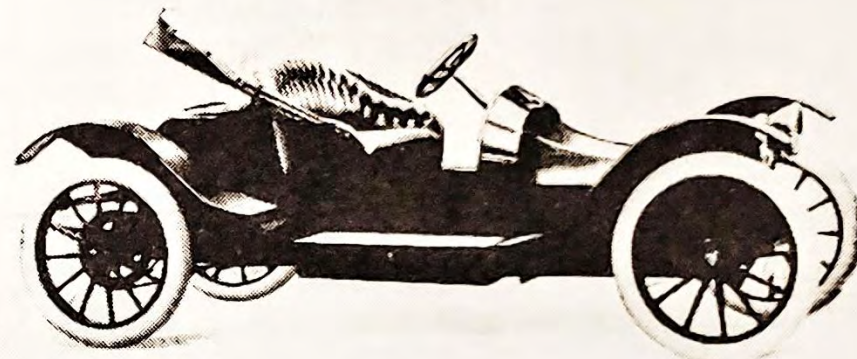
Production of the S. R. Bailey Electric Car, 1908-1915

5/31/2022

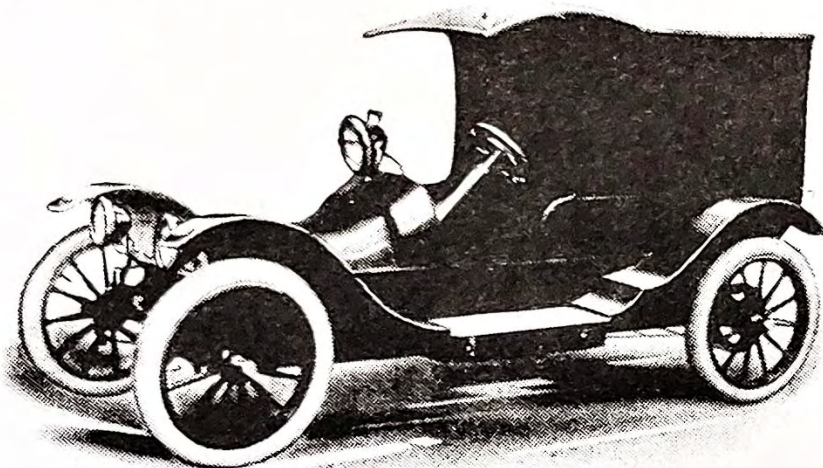
Automobiles Built in Essex County Mass., Hayden Shepley, 1976, pg. 34, text and photo



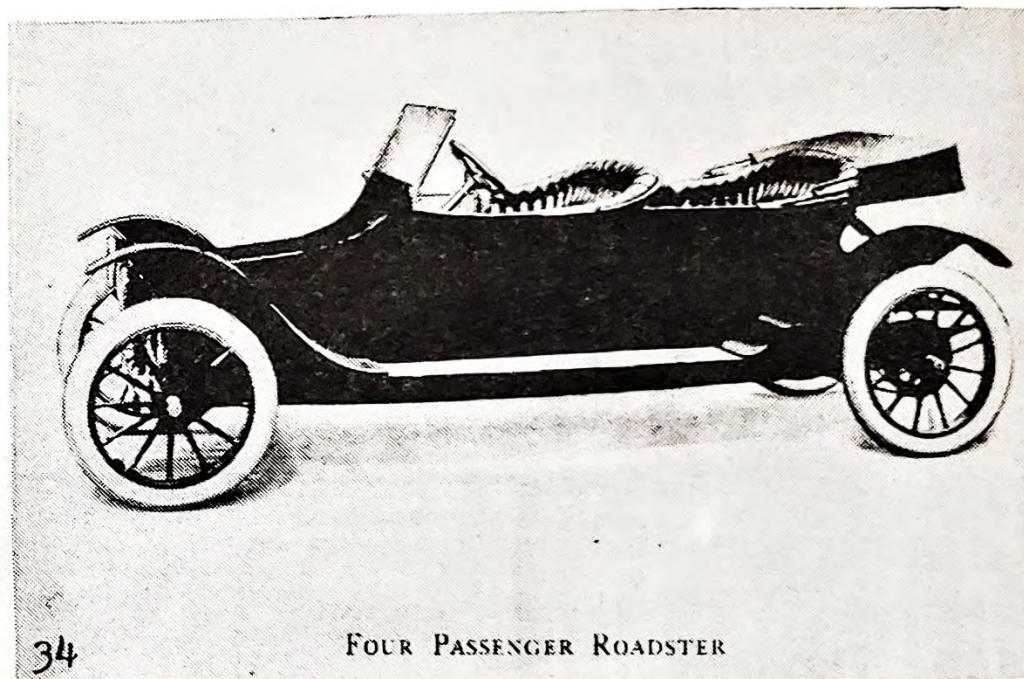
LIGHT SERVICE CAR



BUSINESS RUNABOUT



LIGHT DELIVERY WAGON

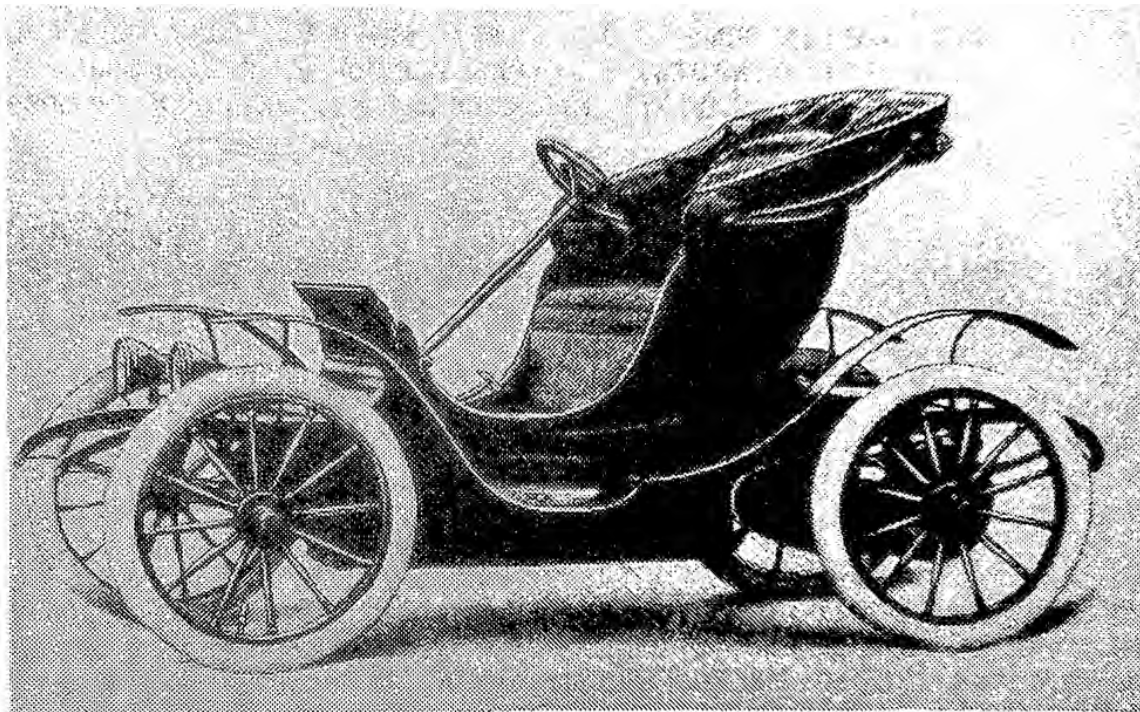


34
FOUR PASSENGER ROADSTER

Production of the S. R. Bailey Electric Car, 1908-1915

5/31/2022

Standard Catalogue of American Cars, Beverly Rae Kimes & Harry Austin Clark,
Krause Pubs. 1996, pg. 95



1912 Bailey Electric, roadster, HAC

BAILEY ELECTRIC — Amesbury, Massachusetts — (1907-1916) — S.R. Bailey & Company, Inc. well knew the value of name-dropping. The Bailey victoria phaeton — the only body style initially available — was said to be the first car designed specifically for the Edison Storage Battery, the collaboration “with the great inventor and his engineers” throughout the development period resulting in the “most nearly perfect motor car of its type.” The Bailey Electric was capable of 80-100 miles at a 15-16 mph average on a single battery charge. The battery was carried underneath the body, “getting rid of the boxes usually seen at front and rear” and vastly improving the usual electric car appearance. The Bailey’s wheel steering was unusual for an electric as well. It was a beguiling little car as a victoria phaeton, and in later roadster variations its styling was quite *nouveau* for the period. But its cost was less appealing, and rather pricey even for an electric. In March 1916 the company declared bankruptcy.

1908-1909 BAILEY ELECTRIC

Queen Vict. Phae.
(76" wb)

1910-1911 BAILEY ELECTRIC

Queen Vict. Phae.
(79" wb)

1912-1913 BAILEY ELECTRIC

Queen Vict. Phae.
(82" wb)
Rds. (106" wb)

1914 BAILEY ELECTRIC

Model F Rds.-2P
(112" wb)
Model F Rds.-4P
(132" wb)
Model EVP Vict.-2P
(82" wb)
Model E Rds.-2P
(82" wb)

1915 BAILEY ELECTRIC

Model F Rds.-2P
(112" wb)
Model F Tour.-4P
(132" wb)
Model F Cabr.-3P
(82" wb)

1916 BAILEY ELECTRIC

Model F Rds.-2P
(112" wb)
Model F Rds.-4P
(132" wb)

Graves & Congdon Crown "High Wheeler," 1908

CROWN — Amesbury, Massachusetts — (1908-1910) — The Crown Motor Vehicle Company was organized early in 1908 for the manufacture of a high-wheeler. Its president was W.A. Shafer, who was the New England distributor for the Glide car. Its secretary was J.R. Graves, whose Graves & Congdon machine shop was the site for manufacture. Its treasurer was Frank Dodge, who was described as a "mechanical engineer and designer of automatic machinery." The Crown featured tiller steering, a "reach" frame, platform springs and was powered by a two-cylinder horizontally opposed air-cooled engine of 12 hp mounted under the seat. The vehicle was well described in *Cycle and Automobile Trade Journal* as having "a neat, carriage-like appearance, there being nothing special to indicate the presence of machinery or mechanism of any kind, other than the side driving chains, which in future models will be entirely encased." Alas, there were not many future models. By 1910, W.A. Shafer had gone back to selling Glides exclusively, and J.R. Graves took over the Crown for the remainder of its short life, with his partner Arthur G. Congdon overseeing production. Occasionally, the car was referred to as the Graves & Congdon.

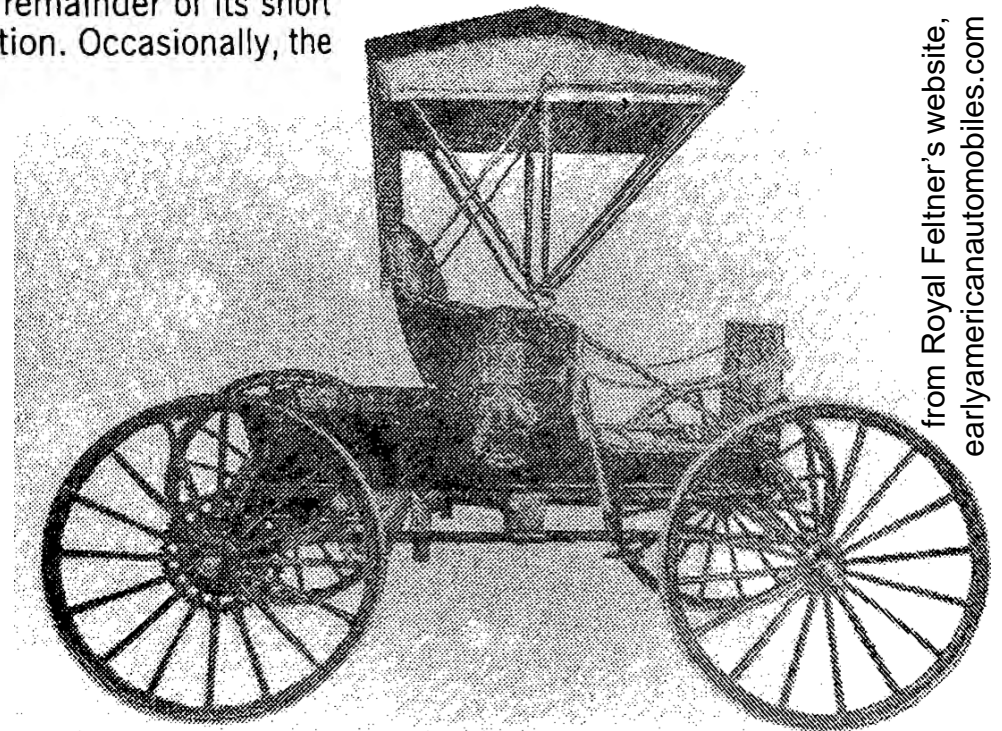
Standard Catalogue of American Cars, Beverly Rae Kimes & Harry Austin Clark, Krause Pubs. 1996, pg. 398

Graves & Congdon Inc.

Incorporated July 9, 1906 with capital stock of \$10,000 by James R. Graves, Arthur Congdon, and Harvey L. Joudrey, located on Railroad Avenue. The first year was directed to painting and trimming automobile bodies. In 1907 Mr. Graves invented and manufactured what was termed a "Luxury Folding Seat", which allowed a five-passenger car to carry seven people by attaching a pair of auxiliary folding seats. This developed into quite a business for a number of years.

History of Carriage Manufacture & Automobile Body Building in Amesbury, John J. Allen, ca. 1955 typescript, pg. 62

"High Wheeler" referred to having large diameter carriage wheels, still useful on rutted dirt roads, having sixteen spokes rather than the typical fourteen to carry the higher weight. Large wheels were not uncommon with early autos.



from Royal Feltner's website,
earlyamericanautomobiles.com

Crown Motor Carriage Co.



Amesbury, Massachusetts

The 1909 *Crown* Having Running Boards & Fenders

Horseless Carriage Magazine February 1908

"The Crown Motor Vehicle Company has been incorporated in Massachusetts with a factory in Amesbury to manufacture High Wheel Cars for business and pleasure to sell from \$600 to \$1000. The officers are W. A. Shafer, President, Frank Dodge, Treasurer, W. A. Grayson, Secretary. They were to be shown at the following Boston Automobile Show. It was the company's belief that a high-wheel vehicle was needed in rural areas. In 1909, minor improvements were made to the running gear, which was renamed the "Graves & Congdon" automobile. Very few were made before shutting in 1910

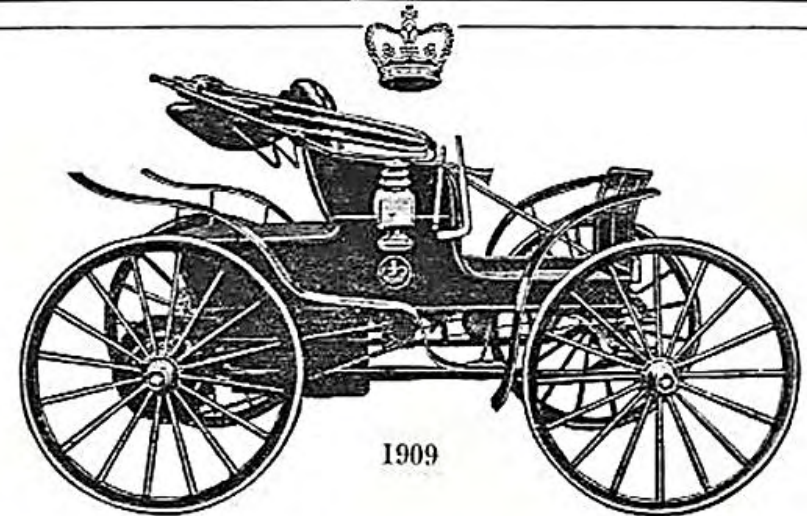
1910 Crown Automobile

from 1910 *Automobile and Cycle Trade Journal*.

CROWN MOTOR CARRIAGE, \$750

High wheel buggy type; wheels 40 inches, with 1 3/8-inch solid rubber tires; seating capacity, two; motor, 2 cylinders, opposed, air cooled; 12 H. P.; 4 3/8 x 4 inches; transmission, individual clutch system; two speeds forward and two reverse; double internal brakes on rear wheels; spur gear differential; full-elliptic springs, front and rear; frame, angle steel or laminated wood; force feed lubrication with eight oilers; wheel base 74 inches.

Quotes and images in this page from Royal Feltner's website, earlyamericanautomobiles.com



"Crown" Motor Carriage

¶ A physicians' carriage, built along lines suggested by physicians, to supply the demand of physicians for a motor carriage to meet the needs of physicians.

¶ Dependable, Manageable, Convenient, Easy Running, Beautifully Finished and Strong and Durable beyond comparison.

¶ Motor power more than sufficient to satisfy any possible demand. No other Motor Carriage of the same size has nearly so strong an engine. It will send the carriage over any road, at any time and in all kinds of weather and yet leave a substantial amount of reserve power for use in cases of emergency.

¶ High wheels carry it through snow, mud, sand, water, up hill or down, anywhere that a vehicle on wheels can ever go.

¶ No punctures or blow-outs. No tire expense or delay. Wide, solid rubber tires give all the ease of the best family carriage with none of the difficulties and expenses of the pneumatic tire.

¶ Chain drive does away with the friction drive common to motor carriages. No frayed, unserviceable bands. Everything clean, strong and practically noiseless.

¶ The only motor carriage built by carriage makers in a strictly carriage town.

¶ The "Crown" Motor Carriage is not put together simply to cover up a motor. Designed by expert carriage draftsmen to give all the distinction and dignity of the best type of carriage finished in high, permanent piano-box lustre.

¶ Do not buy until you have investigated the "Crown" Motor Carriage. Compare it with others. Not a thing about it but is vastly superior.

¶ The price is as low as possible consistent with superb quality, \$850.00.

¶ There are many convincing reasons why the "Crown" Motor Carriage is the best and only practical vehicle for the Physician. We solicit your most thorough investigation. We want you to know. Write to us for fuller information.

Crown Motor Carriage Co.



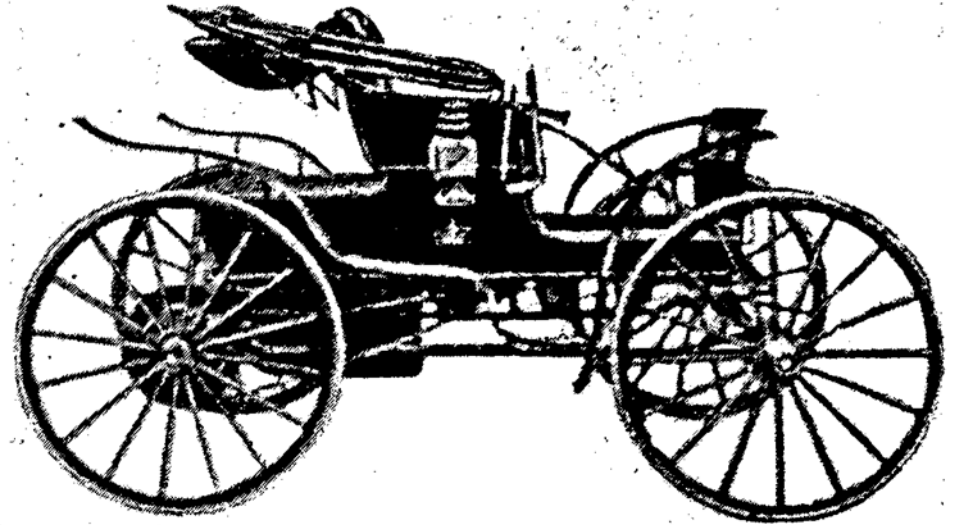
Amesbury, Massachusetts

Graves & Congdon *Crown*, Shepley Input

Automobiles Built in Essex County Mass., Hayden Shepley, 1976, pg. 50, text and photo

GRAVES & CONGDON

The 1909 Graves & Congdon had a two cylinder, horizontal opposed, four cycle, air cooled engine with a bore and stroke of $4 \frac{3}{8} \times 4$ giving 12 HP on an angle iron frame just back of the seat, three point suspension, intake and exhaust valves both on top of the engine, roller crank and camshaft bearings, force feed or mechanical lubrication, jump spark ignition with dry cells, two speed planetary change gear on roller bearings with direct on high speed, chains to each rear wheel, Timken roller bearings on each axle, wheelbases of 74-80", full elliptic springs, tiller steering, external brake on rear wheel drums, one lever to control all speeds, a brake pedal, a $6 \frac{1}{2}$ gallon, galvanized, iron gasoline tank under the seat, and specialized in ease of control and of simple construction. There were two runabout models each seating three abreast, weighing 1150-1175 lbs; with similar equipment, and costing \$750 to \$850. They were Corning and Stanhope type bodies called A and B.



CROWN

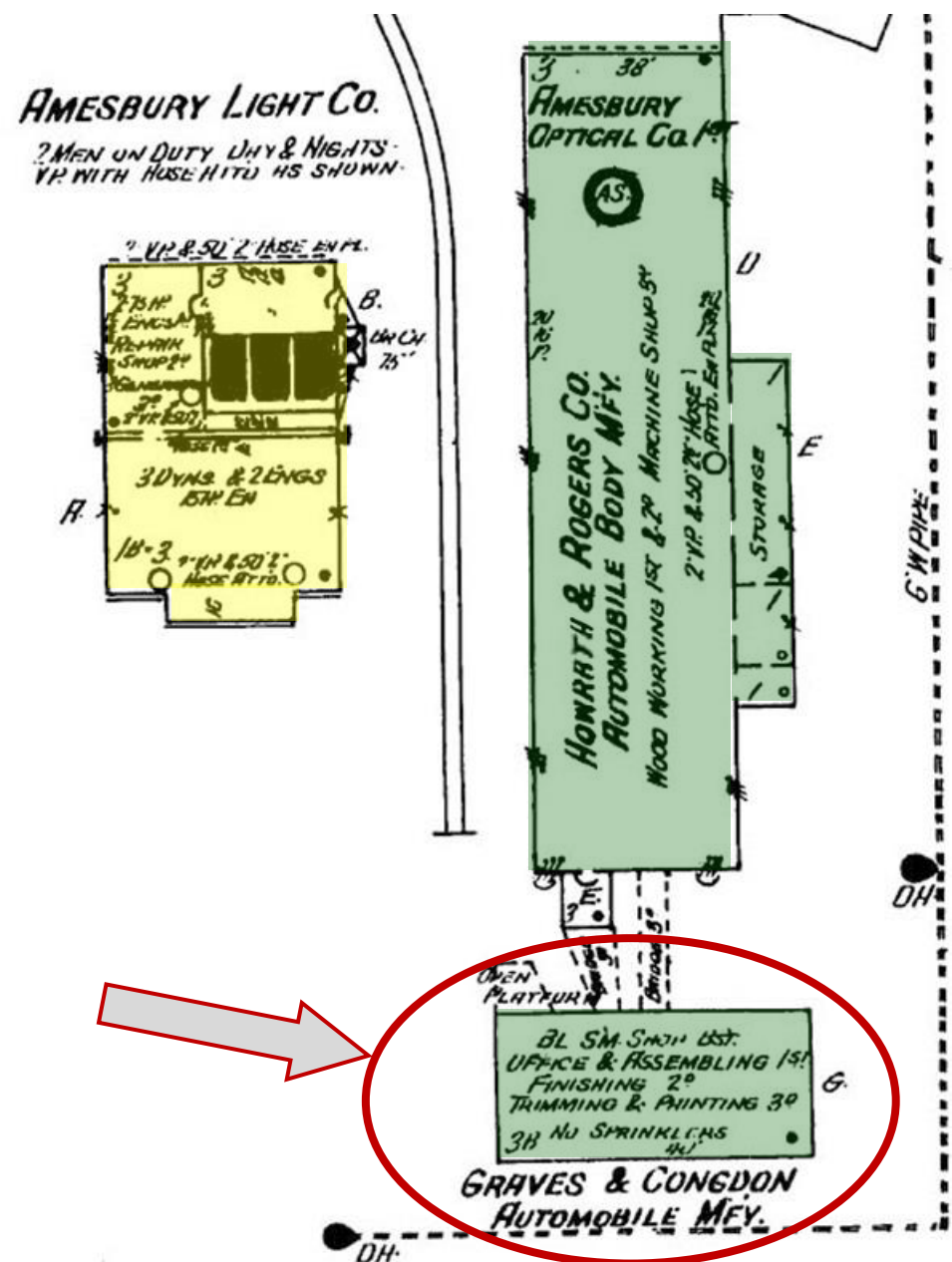
In 1910, the Graves & Congdon Co. built the Crown buggy-type car. Its specifications differed from the Graves Car by having double internal brakes and seating two. Its wheelbase was 74 inches and it cost \$750.

Assembling the *Crown* Automobile

1909 Sanborn Insurance Map, sheet 15

The Graves & Congdon Automobile Company was located in the attached outbuilding at the south end of the "Electric Light" factory at the bottom of Oak Street. The main building, former site of the Boston & Amesbury Mfg. Co. automobile plant, was now the Howarth & Rogers Co. automobile body factory. While purely speculative, it would have at least been convenient if Howarth & Rogers were the source of Graves & Congdon bodies.

Whatever their body source, the Graves & Congdon facility had little space, none of which was declared as devoted to woodwork or machining. (These are specifically called out for Howarth & Rogers.) Graves & Congdon, had been engaged in light fabrication of folding seats, with little apparent heavy manufacturing capability or experience. However, they may have been making a light chassis by similar methods. Their auto-making plan was seemingly to not make much of the auto, assembling it instead from outside available components and then painting and trimming it, which was entirely possible in the early auto industry just as it had been with previous carriage making.



Dashed lines at the periphery indicates 6" water pipe serving dual fire hydrants.

The Howarth & Rogers *Ultra*, 1912

ULTRA — Amesbury, Massachusetts — (1912-1914) — The Ultra Motor Car Company was established in Amesbury in 1912 and a prototype of its new car was completed in the shops of Howarth & Rogers Company that October. Designed by R.H. Randall, the Ultra was a 38 hp six, fitted with a four-speed selective transmission, and set into a 128-inch wheelbase chassis. “The first body which has been built is entirely an Amesbury production and gives promise that the new cars will be handsome ones,” *Automobile Topics* reported. “The radiator is of the pointed type, aiding materially the sweeping lines in securing a low and speedy appearance.” Sporty wire wheels were fitted. The Ultraline was to include touring cars for five (\$3,000) and seven (\$3,200) passengers, and a roadster at \$2,800. In the month following, the first car built was used as a demonstrator in and around Boston in an attempt to raise financing. In late November 1912, the Ultra Motor Car Company announced plans to relocate in Taunton where the firm would lease quarters in a building then occupied by the Interchangeable Rubber Heel Company and a tire manufacturer. Whether relocation followed is not known, nor is the quantity of cars built. Massachusetts registrations for 1914 include three Ultras, however, bearing serial numbers 010, 053 and 101.

Standard Catalogue of American Cars, Beverly Rae Kimes & Harry Austin Clark, Krause Pubs. 1996, pg. 256

Ultra Six Appears in Amesbury

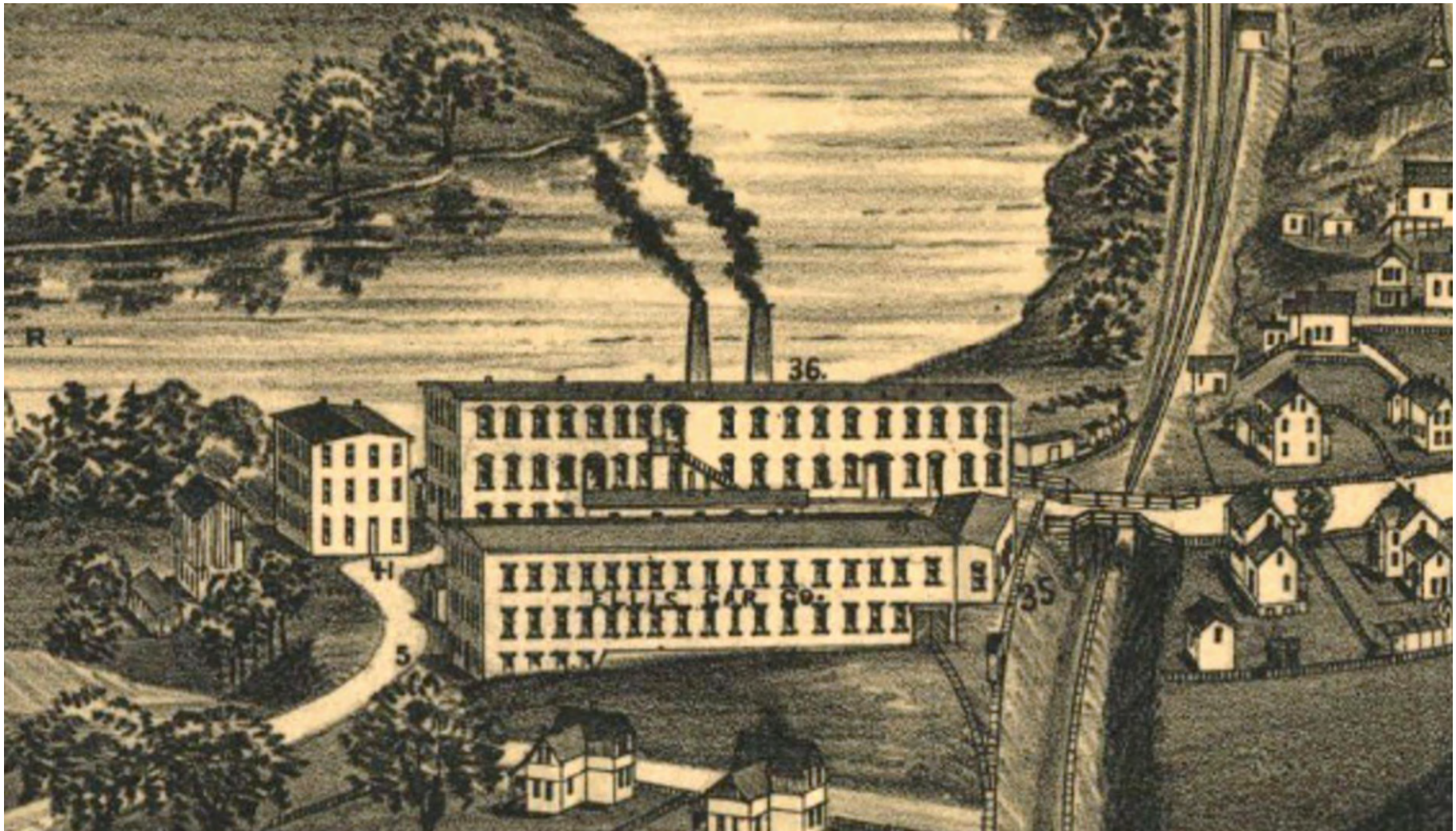
The first Ultra car has made its appearance, in Amesbury, Mass., from the shops of Howarth & Rogers Co. The machine is a six-cylinder one, and has been designed by R. H. Randall, a member of the Society of Automobile Engineers. It is to be made in a seven-passenger car for \$3,200, five passenger for \$3,000, and roadster for \$2,800. The cylinders are cast in threes, and the motor develops 38 horsepower. The transmission is of the four-speed type. The first body which has been built is entirely an Amesbury production, and gives promise that the new cars will be handsome ones. The radiator is of the pointed type, aiding materially the sweeping lines in securing a low and speedy appearance. While the car is low hung, the clearance is ten inches. A point where the car resembles a foreign one is in the wheels, which are of wire, interchangeable, with a spare carried in the rear for use when it becomes necessary to change a tire. The wheelbase is 128 inches. The first machine to be turned out will be used as a demonstrator in and around Boston. It is probable that the Ultra Motor Co. will locate in Amesbury and build a plant, the Howarth concern having acted merely as assemblers for the first machine.

From Royal Feltner's <https://www.earlyamericanautomobiles.com> where it was copied from the 1912 Automobile Topics Magazine

Howarth & Rogers Factory (rear building, #36)

The Electric Light Building, Oak Street, with electric generating plant below

The 1889 complex of carriage maker, William G. Ellis, (near building for trolley production, burned 1893). Behind, down along the river, was an electric power generating plant. The brick factory (now townhouse condominiums) had electric power, along with its second smokestack for steam heat. The Oak Street bridge is just right of building. The Boston & Amesbury Mfg. Co. had been in the main building, while Graves & Congdon had been in the smaller addition, far left. (map pg. 46)



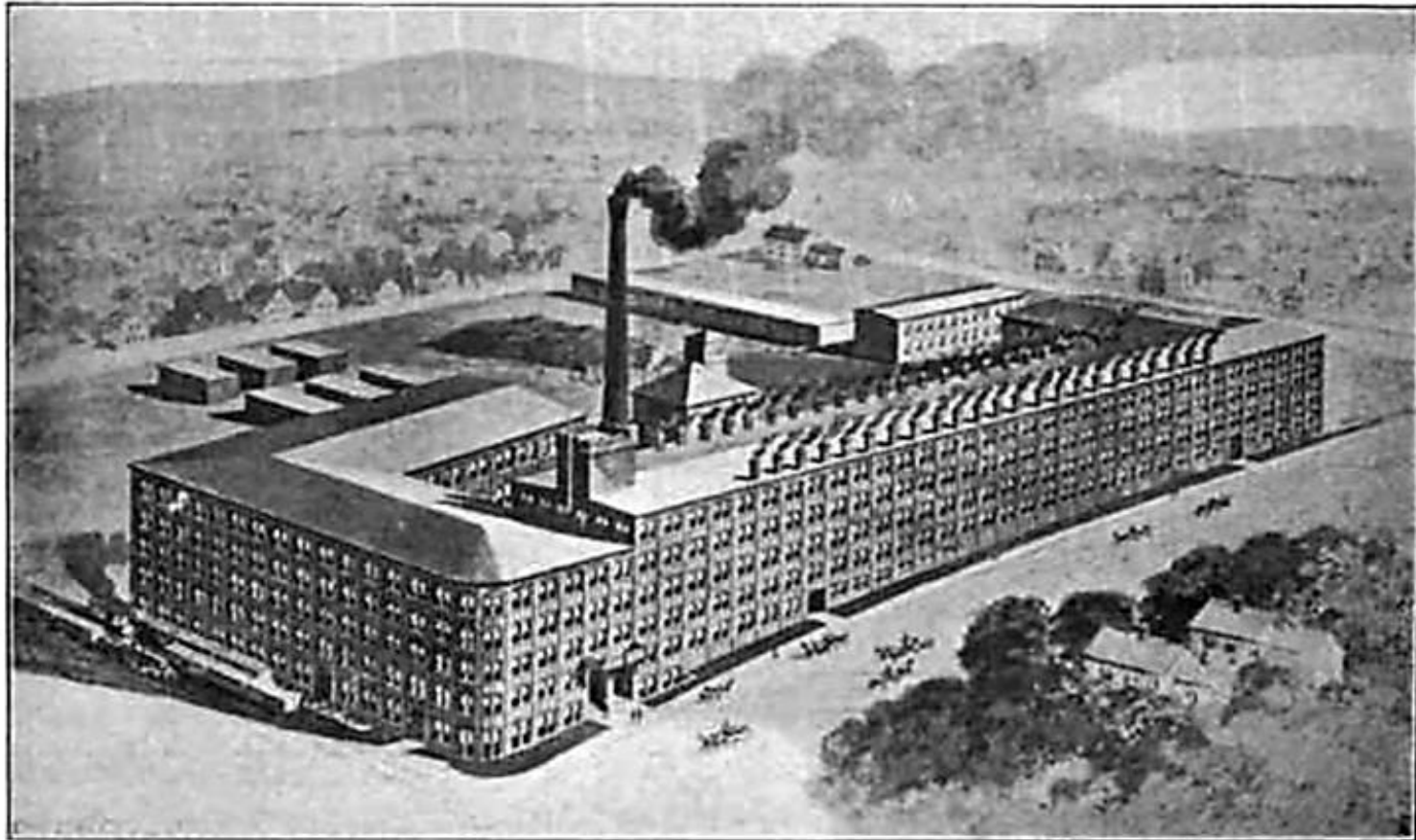
1890 aerial map, Geo. E. Norris Co., Brockton MA

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