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THE RUBBER INDUSTRY IN NEW JERSEY

The implantation and development of the pioneering rubber industry in the United States is clearly marked by three stages, in each of which a specific geographical area is the protagonist. The first industrial applications took place in Boston and adjacent towns, particularly for its well-established footwear industry, between 1825 and 1840. In a second phase, approximately between 1850 and 1890, the hegemony of the sector moved to the state of New Jersey with epicenters located in Trenton and New Brunswick. In this phase, an extensive array of new industrial rubber-derived products was produced, which included solid tires for bicycles and wagons. Towards the end of the century, with the emergence of motor vehicles, a third stage materialized, in which the tire industry and other components of automobile mechanics (belts, gaskets, brake pads, etc.) were developed. During the first three decades of 1900, the city of Akron and surrounding areas in the state of Ohio were the clear leaders in this new industrial adventure.

1. From the Amazon jungle to Boston

The milky liquid or latex obtained from bleeding the trunks of *Hevea brasilensis*—a tree typical of Amazonian forests in Brazil—and converted by coagulation into solid rubber, was not sent from this South American country to foreign markets in this form, but rather as locally manufactured products such as bottles or footwear. Like the containers, footwear was made of one piece, shaped by molds coated with superimposed layers of natural rubber subjected to a curing and drying process. Its great virtue was being impermeable to water, although it was a delicate and fragile product that degraded rapidly. This was due to instability caused by thermal changes: heat caused it to soften and cold to harden, sunlight caused discoloration as well as the fact that the material lacked consistency and tenacity. In the case of footwear, it was easily pierced through by rocks and nails from the ground or floors.

Most of the articles were used in the countries of destination to perform functions for which they had been designed, but a smaller portion was intended to be converted into a waterproof compound. For this latter function, the items were cut up, mechanically "chewed" and broken down by solvents such

as turpentine—extracted from conifer resins—and mixed together with other substances such as sulfur, to create a protective rubber varnish that was spread on the surface of fabrics and leathers. Its first applications go back to the end of the eighteenth century and by 1812 these products were already commercialized in Europe.

The first rubber boots and shoes reached the North American market in 1825 and were imported from Pará, Brazil's hub for the procurement and trade of natural rubber, making their landing in Boston.[1] It's with good reason that this was their destination as Boston and the northern and Atlantic region of New England had a traditional leather and footwear industry that was eager to strengthen its leadership with the incorporation of new rubber technology (figs. **2-4**). Thus, each manufacturer, surrounded by extreme secrecy regarding the processes and combination of products used in waterproofing varnishes, tried to perfect the rubber coating's poor stability for its adaptation to the proven durability and ductility of natural leather.

In 1830 Edwin M. Chaffee (1806-1872) developed his own method for dissolving rubber and the industrial application of the compound by spraying it onto surfaces to be waterproofed. It's likely that the first industry to employ this technique was the Roxbury India Rubber Factory established in 1833 by Chaffee in Roxbury, near Boston, so as to apply his own methods. This new adventure was followed by at least eight more factories before the end of 1839. Among these entrepreneurs was Nathaniel M. Hayward (1808-1865), founder of the Eagle Rubber Company of Woburn, a town less than 15 km from Boston, and possessor of the 1932 patent that utilized sulfur for the production of rubber varnishes. A severe crisis in the nation's economy led to the closure of the Chaffee and Hayward enterprises in 1838. The latter, along with his valuable patent, was acquired by Charles Goodyear (1800-1860). Although the company's ownership later returned to Hayward, Hayward continued to work for Goodyear who cleverly retained ownership of the patent.

In 1839 Goodyear discovered vulcanization—at a workshop near the Woburn factory—a process that produced treated rubber possessing great stability against thermal changes. Its sturdy resistance employed the controlled use of heat and compounds such as sulfur, and Goodyear obtained the corresponding patent five years later, in 1844. Manufacturers, who had their own particular methods and technologies but never reached the quality of the material obtained by vulcanization, adopted the new technology and the consequent payment for its use. Between 1843 and 1851 the footwear production figure under license with Goodyear reached 15,000 pairs a day.

From the time the patent was granted until its expiration in 1865 Goodyear exercised strict control over the rubber industry, peppered with numerous litigation against those who sought to use their processes without permission. Licensing not only covered the manufacture of footwear—waterproof footwear or rubber-soled leather shoes—but also any product in which vulcanization was utilized. This was the case of waterproof fabric or hard rubber articles resulting from the super vulcanization of molded and extruded rubber, the so-called "vulcanite" that was similar to Bakelite (the latter developed in 1907). It was utilized for producing rigid items such as dress buttons or tobacco pipes, becoming a synthetic substitute for wood, ivory or natural whale bone. By 1851 about twenty companies were legally manufacturing all kinds of rubber articles using the Goodyear patent.

2. From Boston to New Jersey

In 1848, six companies merged into one association—the Goodyear Associates and Licensees—that manufactured rubber footwear operating under Goodyear's license. Three belonged to the State of Connecticut: Goodyear Metallic Rubber Shoe Co. in Naugatuck[2] (figs. **5-7**), Leverett Candee in New Haven, and Hayward Rubber Company in Colchester. The remaining three were located in the State of New Jersey: Newark India Rubber in Newark, Onderdonk and Letson in New Brunswick and Ford & Company in Milltown. Different towns in New Jersey took over Boston's lead as a pioneering center of the North American rubber industry.

In 1890 the production of rubber footwear was dominated by 17 large companies. Among this list, all but two ended up under the control of the United States Rubber Company: Goodyear Rubber and Lambertville Rubber.[3] The latter, founded in 1860, took the name of the area that housed the factory, the town of Lambertville, New Jersey. Its star product was the Snag-Proof waterproof boots, marketed around 1876-1886 under a patent by Elisha Stout (fig. **4**). The Lambertville Company eventually closed and was absorbed in 1928 by the Goodyear Rubber Company.

In 1910 the State of New Jersey had 2,537,167 inhabitants who participated in much of the automobile industry boom and the manufacture of its components. In 1913 there were 49,588 cars, 8,419 motorcycles and 1,772 heavy trucks registered in the State. Approximately 40,000 men worked in the automotive and components sector, as well as 7,000 garage employees and 14,000 chauffeurs.[4] For this same year the number of employees in the New Jersey rubber industry was: 8,125 men, 1,326 women and 169 children, for a total of 9,656 workers in 56 factories.[5]

Of the twenti-one counties in which New Jersey is administratively subdivided, two were the protagonists: Mercer, with Trenton as its capital; and Middlesex, with its capital in New Brunswick. Both were located along the banks of navigable and interconnected rivers—Trenton along the Delaware River, New Brunswick on the banks of the Raritan River—and fueled by these waters, they became the new enclave of development for the rubber industry.

3. Trenton, capital of Mercer County

The city of Trenton was the capital and motor of Mercer county, which is comprised of 13 municipalities. Its geographic location was strategic for industry and commerce, as it was just 100 km from the large New York City market and its port connecting to the Atlantic coast. In addition, less than half of this distance in the opposite direction was the city of Philadelphia and its rich deposits of coal and raw materials.

River navigation was a natural route of circulation between these two cities and played a prominent role along with the development of motorway and railway infrastructures. The Delaware River crosses through Pennsylvania, enters New Jersey and passes along Trenton on its way to the Atlantic. The Raritan River originates in New Jersey and flows towards the ocean emptying into the bay that bears its name, south of New York City. By 1830 the Delaware & Raritan Canal was built, linking both waterways and establishing a navigable route between the two territories, with an obligatory stop in Trenton. Thus, fueled by raw materials and taking advantage of the water supply for industrial purposes, a great impulse was given to production activity that transformed and manufactured articles, destined to reach nearby markets of distribution and consumption, such as New York.

The rubber industry flourished along with the metal industries of iron and steel, as well as that of ceramics. By the 1850s and until the end of the century the manufacture of rubber products occupied the business of at least ten large local firms such as Trenton Rubber, Mercer Rubber, Home Rubber, Whitehead Brothers Rubber or Crescent Rubber Works. They produced items such as footwear and boots, waterproof fabric and clothing, buttons and items made of rigid rubber, industrial rubber belts, sanitary articles, O-rings, linoleum or solid rubber tires for cart or bicycle wheels.[6]

This process of growth and new employment opportunities are clearly reflected in the population figures for the city of Trenton. The census grew from approximately 4,000 inhabitants in 1840 to 6,461 in 1850. This number increased by 166 % ten years later, with 17,228 inhabitants in 1860. The turn of the century gave way to the emerging automobile tire industry, and a number of existing companies as well as other newly founded ones incorporated this item into their product catalogs. Between 1900 and 1915 various pioneering companies were constituted in Trenton such as Thermoid Rubber (founded in 1909), Acme Rubber, Globe Rubber and Empire Rubber (the latter two active since the end of the 19th century), Grieb Rubber (created in 1905 and absorbed by Ajax Rubber the following year) or Delion Tire & Rubber (1914). At the turn of the century these companies competed with the emerging industrial strength of the city of Akron. Although the capital of Ohio soon took the lead in the tire industry, Trenton maintained second position (fig. 1).

Testimony of this period of growth is found in the expression that still prevails to this day- "Trenton Makes, the World Takes." The phrase was coined in 1910 after a contest organized by the Trenton Chamber of Commerce and it became the motto of the prosperous city. Gigantic wooden letters were placed along the iron bridge located over the Delaware River, parallel to the Pennsylvania Railroad's railway line, thus becoming an integrated message in the urban landscape and viewed daily thereafter by hundreds of travelers.[7]

4. New Brunswick, capital of Middlesex County

The county of Middlesex is constituted by the sum of 25 municipalities, such as the adjacent New Brunswick, North Brunswick, East Brunswick and South Brunswick. Precisely on the natural border between North and East Brunswick is the small borough of Milltown, marked by the passage of the narrow, elongated Farrington Lake—one of those dotting Lawrence Brook, a tributary of the Raritan—which splits the town in two. Milltown was historically a part of the North Brunswick municipality, of which it depended. But similar to the previous division of New Brunswick and East Brunswick, in 1889 Milltown acquired its own administrative entity. It is in this locality where the seed of Michelin's American venture was planted.

New Brunswick was also the enclave where the interests of some of the most important names of the rubber industry pioneers intersected. They included entrepreneurs such as Horace H. Day, Christopher Meyer, Lewis Legrand Hyatt, Henry Lee Norris or Hiram Hutchinson.

Horace H. Day (1813-1878), a native of Great Barrington, Massachusetts, settled in New Brunswick with his uncle, Samuel H. Day, a store owner who had already been importing Brazilian rubber footwear. Day soon began experimenting with rubber treatment processes. He opened his own establishment in the same town around 1826, where he manufactured and shipped articles derived from rubber, including hats, coats, waterproof fabrics and his own footwear. Around 1838, Day began the venture of setting up a factory in New Brunswick to primarily produce

footwear and other articles derived from treated rubber. He acquired the machinery necessary to operate the method developed by Chaffee from a supplier in nearby Newark and hired a skilled operator from the shop for its implementation in his establishment. This employee was a young, German-born man named Christopher Meyer.

The fierce legal disputes between Day and Goodyear, the latter accusing the former of breaking the law regarding his patent on the processes of vulcanization, culminated in the famous Trenton court proceeding of 1846, known as "The Great India Rubber Case." After the conviction of Day, he transferred the factory (figs. **12**) with its machinery to a Goodyear representative and accepted financial compensation in exchange for a provision that forced him to withdraw from the business. After going through several owners, Day´s New Brunswick factory would eventually end up under the ownership of Meyer in 1870.

John Cristopher Meyer (1818-1888) was born in Hannover and arrived in the United States in 1834. Two years later, he obtained a job in an industrial machinery store in Newark. With demonstrated skills as a technician, in 1836 Meyer was hired by Day during the set-up of the mechanical device purchased by the latter, and Meyer became the factory´s superintendent. In 1840 he began his own company and ran a modest rubber products business near New Brunswick. He left the company in 1843 under contract by John C. Ackerman to build and run a rubber derivatives factory located further south in nearby Bergen Mills, in an area known as Milltown.[8] For this reason he partnered with a local businessman experienced in the rubber trade with Brazil—and also a supplier of raw materials for several factories in the sector—named James Bishop (1816-1895), born in New Brunswick. In 1844 Meyer took over the factory producing waterproof fabrics for carriages, leather and rubber boots as well as military equipment—rowboats and inflatable boats, rubber bridges and gangplanks—employed by the government in the war against Mexico. The business closed in 1845 after barely one year of activity, when the factory premises and Meyer's own residence caught on fire, leaving him in financial ruin.

After the disaster and reemerging transformed from bankruptcy, Bishop and his partner and brother-in-law John Ross Ford (1817-1896) founded a new company that same year, named Ford & Company. Meyer became a partner and held the position of superintendent, in charge of producing rubber footwear at Milltown's rebuilt factory. In 1854 the company changed its name to Meyer Rubber Company, with Meyer as President and John R. Ford as Manager and established itself as one of the most dominant firms in the rubber industry. Meyer, who became powerful and known at the time as "The Rubber King," invested and took the leading role in establishing several new companies within the sector (figs. **9-11**).

Henry Lee Norris (1813-1881) worked during his youth at Roxbury India Rubber in Boston.[9] In 1843 he traveled to Pará, Brazil, where in later years he resided as consul of the United States. He partnered with Bishop, contributing his extensive experience in the rubber business, and later they were part of a small group of eight American partners—including Meyer and Ford—who founded Norris & Co. in 1855 in Scotland. This constituted the start up for the important North British Rubber Co. Ltd. of Edinburgh, established in 1857. In 1853, along with Martin A. Howell and Nicholas Williamson, Meyer organized the Novelty Rubber Co. in Beacon Falls, Connecticut. In 1855 the company moved to New Brunswick, where it manufactured hard rubber items, such as bottles, tobacco smoking pipes and dress buttons, until its closure in February 1886.

Lewis LeGrand Hyatt (1820-1903). In 1845, Hyatt became part of the Ford Rubber Co. which had started the manufacture of rubber footwear in New Brunswick, NJ. The company was owned by John Ross Ford and James Bishop and Christopher Meyer worked as the superintendent. Hyatt moved to France in 1855 to occupy the position as head of the factory established by the American company Hutchinson, Henderson & Co. near Paris. Later, regaining his relationship with Ford and Meyer, he was sent in 1859 to occupy the position of superintendent for North British Rubber in Scotland. He returned to the U.S. 10 years later to launch the Hyatt Rubber company—with Meyer and Ford as partners—dedicated to manufacturing footwear. Hyatt used the premises of the former factory of Horace H. Day in New Brunswick, which was later destroyed by a fire in 1875. Hyatt Rubber Co., in a new and closer location, eventually became the New Jersey Rubber Shoe Company of New Brunswick in 1877, which ultimately transferred ownership to the United States Rubber Co. in 1892. Retired from the American rubber business, Hyatt returned to France where he ran, unsuccessfully, a celluloid factory, and later settled in London.

Hiram Hutchinson (1808-1869) was born in New Brunswick and founded the Newark India Rubber Company around 1846. He partnered with financier John Cleve Henderson to form Hutchinson, Henderson & Co. with the aim of creating the largest footwear production center in Europe using rubber technology. As such, the Compagnie Nationale du Caoutchouc was founded—known as the Compagnie du Caoutchouc Souple—which began its activity in France in late 1853. The first factory was located near Montargis, around 100 km south of Paris. In 1857, a second factory was built in the Parisian district of Picpus and in 1860, with a view of expanding to the Central European market, its third factory was established in Manheim, Germany.

5. The United States Rubber Company

On March 29, 1892, the United States Rubber Co. was legally constituted in the State of New Jersey, with the signing of five founding members, none of which, curiously, had any relation to the rubber industry. The plans for business expansion reflected the latent sentiment of unifying different companies in the footwear sector, and an aggressive policy of concentration was initiated. On April 5 of that same year the company incorporated its first factory upon purchasing the property, equipment and associated businesses of the New Jersey Rubber Shoe Co. in New Brunswick.

Several important factories submitted to the control of the U.S. Rubber by means of exclusive contracts and began to produce for them, if not integrated into the corporation: Meyer Rubber Co. of Milltown, New Brunswick Rubber Co.[10] (figs. **17-24**) and the aforementioned New Jersey Rubber Shoe Co. of New Brunswick, Goodyear Metallic Rubber Shoe Co., National India Rubber Co., The L. Candee & Co., Woonsocket Rubber Company and the largest rubber shoe manufacturer in the country, the potent Boston Rubber Shoe (acquired in 1898), among others.

The interests of the corporation in the footwear sector were merged with those of manufacturing other articles derived from rubber—belts, elastic bands, O-rings, tubes and hoses, pavements, waterproof fabrics, sanitary, medical and surgical supplies, solid rubber tires for vehicles, carts and bicycles—with the acquisition in 1905 of the Rubber Goods Mfg. Company in New Brunswick. The latter had been created in 1899 and had previously absorbed most of the leading companies in its sector.[11] The resulting list of new incorporations included several factories specializing in solid rubber and pneumatic tires for all types of vehicles (figs. **15-16**), including four large firms that were well positioned in the emerging motor market: Hartford, Hartford-Dunlop, Morgan & Wright and G & J (Gormully & Jeffery Mfg. Co.).

Most of the absorbed companies continued to manufacture under their own label, and it was not until 1915 when the initiative to unify under a single brand, U.S. Rubber, was instigated. The implementation of this unification came about gradually. In the early years, the annual conventions that brought together the representative offices of various companies comprising the group were held at the United States Rubber headquarters in New Brunswick, New Jersey. This leading company in the market, omnipresent in the business of diversified rubber, also strengthened its dominance in the tire sector.[12]

6. The first rubber industry in Milltown

The origins of the connection between the rubber industry and Milltown date back to 1843, with the construction of the first Meyer and Bishop factory. After its destruction in a fire in 1845 Ford & Co. installed a factory on the premises dedicated to the production of footwear. In 1858 Meyer Rubber Co. built their factory next to it and absorbed its competing neighbor in 1861, the year that Meyer's new factory was devastated by a fire and he built a new installation on the same property. However, his company ended up becoming part of the business conglomerate controlled by U.S. Rubber in 1892. Although the Meyer Rubber company continued to exist, its business moved to one of the other production centers, the New Jersey Rubber Shoe Co. factory in the neighboring area of New Brunswick (figs. **15-16**). Meyer's factory in Milltown remained inactive and shut down since March 1897.

Two new business ventures were successively initiated after the turn of the century. The first, promoted by Milltown India Rubber, was abruptly interrupted in 1902. The second one began that same year, carried out by the International Automobile and Vehicle Tire Company, who would facilitate five years later the launch of Michelin in American territory.

The Milltown India Rubber Co. was created in 1899. Its founder was John C. Evans (1855-1902), son of John Evans, a former employee of Ford & Co. and director of the Meyer factory in 1855—in 1840 Meyer had married his sister Margaret Evans in Milltown. Evans Jr. was an important businessman, an active and respected community member and a leader and promoter of Milltown's independence process as a population with its own administrative entity, which it achieved in 1889. He was elected as Milltown's first mayor, a position he held until 1901. After the closure of Meyer's factory, and as narrated in a news item from 1902:

> "The village of Milltown being thus deprived of its leading industry, and the population being composed largely of trained rubber workers who owned their homes, and were not disposed either to engage in another industry or leave Milltown, Mr. Evans led a movement to establish a new rubber shoe factory there."[13]

The newly built Milltown India Rubber Co. with a staff of about 200 workers was launched on August 27, 1900, with Evans as president and general director, backed by shareholders comprising several of the town's top businessmen and some of the employees themselves.[14] But his early death at the age 47 left the Milltown India Rubber Co. without leadership and led to bankruptcy and subsequent closure after only two years of activity. Land, equipment and buildings, which had been in disuse since 1902, were purchased in 1905 by the Willis W. Russell Card Co., a company dedicated to manufacturing playing cards. The factory remained active until the firm moved to Ohio in 1936, after being purchased by the United States Playing Card Co.

In June 1902, The International Automobile and Vehicle Tire Co. purchased Christopher Meyer's land and factory at Milltown, which had been out of commission for five years (fig. **13**). The International A. & V. Tire Co. had been legally established on April 15, 1899 with a capital of $ 3,000,000 and founding partners Richard S. Croker, Charles King (from Jersey City) and Frank E. Bradley (from New York). The new company had acquired the plants of L. C. Chase & Co. in Boston and in Chelsea, Massachusetts, as well as the company Newton Rubber Works and its factory in Newton, Upper Falls, also located in Massachusetts. The promoter of the new firm and founding partner, financier Richard S. Croker, held the role of Vice President and hired John C. Matlack as President and A. H. Alden as Treasurer.

The International A. & V. Tire Co. was engaged in the manufacture of solid rubber and pneumatic tires for all types of vehicles such as bicycles, carriages, motorcycles, automobiles and trucks. It produced goods for its own brands as well as for other manufacturers—in 1901 it produced tires for Kelly-Springfield Rubber Tire Company in Davenport, Iowa. In spite of what its name may indicate, the International Automobile & Vehicle Tire Co. also produced other manufactured rubber products for utilities other than motor vehicles, such as rubber components for machinery or for sanitary, medical and surgical uses.

In July 1902, the necessary machinery was transferred from Newton's premises to the new site in Milltown for the factory to be set up. The factory was already operational in August.[15] It produced solid rubber and pneumatic tires for other companies, such as the Kempshall Cushion Pneumatic Tire model for the Rubber Tire Company of America in 1902, the Apex tire, the Blaurock Puncture Proof and Stodder tires—the latter, after acquiring the rights in 1904 16. They also manufactured their own brands such as the Fox brand—licensed by G & J Tire Co.—or Endurance (figs. **13-14**).

In 1904 the International A. & V. Tire Co manufactured single-tube bicycle tires—the outer casing/cover and the air-tight tube are vulcanized together to form a single hollow tube, similar to a rubber hose—under eleven different brands, and increased the catalog offerings to sixteen the following year: International (Red Fox Tough Tread, Endurance Roadster- Heavy Cactus Tread, Chase Tough Tread, Chase Roadster, Road King, AA and BB), Newton Roadster, Endurance Cushion Pneumatic, National Heavy Tread, Thorn Proof Thick Tread, Metropolitan, Metropolitan Juvenile, Imperial, Hummer Special and Kensington.

In 1905, it started producing double-tube bicycle tires—a tire composed of two separate parts: an outer casing/cover and an inner tube inserted inside of the casing—for the first time, under the brands International Chase Roadster Double Tube and Newton Roadster Double Tube. These were added to the model of inner tubes already launched two years before, the International Fox Brand. The 1905 catalog was complemented by a line of accessories—valves, patches and glue for automobile tire repairs—as well as motorcycle tires.[17]

In 1906, the company was granted the license to apply the technology of anti-skid rubber treads developed by C. J. Bailey & Co. of Boston to its pneumatic tires, which soon became an industry standard.[18] By the beginning of 1907 the company already counted on delegations in eight cities: Boston, Buffalo, Chicago, Detroit, Minneapolis, Atlanta, Los Angeles and San Francisco.[19]

In 1907, the French company Michelin conducted market studies at the international scale. They were determined to install their own factory in foreign lands, and their attention was drawn to the International A. & V. Tire Company in Milltown.

7. Ohio vs. New Jersey

After the turn of the century, the most active state in the development and implementation of the rubber and tire industry—which happened throughout New England and New Jersey—was Ohio, with its flagship city Akron leading the way. The beginning of the intense relationship between Akron and this industry has a specific protagonist and concrete date. In 1870, the production of a modest rubber derivatives factory, the Hudson River Rubber Company of New York, was transferred to this city by the two partners who ran the company, Harvey W. Tew and Benjamin Franklin Goodrich. Attracted by the promotional efforts of a private group of Akron promoters and investors—determined to encourage and revive the region's meager industrial activity—they were completely supported to facilitate the process of growing their business. The Akron Rubber Works-Goodrich, Tew & Co. was created in which the two founders and 23 Akron businessmen participated, dedicated mainly to the production of belts and joints, fire hoses and tubes. Ten years later, in 1880 the company changed its name to the B. F. Goodrich Company.

The success of Goodrich encouraged the genesis of many companies in the sector, creating the phenomenon of concentrating an industrial activity in a single territory. The enclave offered possibilities for expansion and growth, a new path of industrial development geographically remote from the dominion and influence of the all-powerful leader in the sector, the United States Rubber Company.

The availability of specialized labor along with the established commercial channels for obtaining raw materials and all other benefits from this concentration were shared and conveniently taken advantage of. Following the footsteps of Goodrich, some of the most powerful firms in Akron materialized, which produced solid rubber and pneumatic tires for bicycles and wagons, and later for the emerging world of motor vehicles, such as Miller Rubber (1892), Diamond Rubber (created in 1894 under the name of Sherbondy Rubber Co. and acquired by Goodrich in 1912), Goodyear (1898), Firestone (1900), Swinehart Tire & Rubber (1904), Star Rubber (1907), American Tire & Rubber (1911), Mohawk Rubber (1913), General Tire & Rubber (1916) or India Tire & Rubber (1916), among many others.

Of the four North American tire leaders in 1920—known as the "Big Four" and led by United States Rubber—three had their roots in the city of Akron: Goodrich, Goodyear, and Firestone. At the dawn of the Great Depression of 1929 "(…) about a quarter of all tire industry firms were located within 80 km of Akron, which was the geographic center of industrial production."[20]

The pre-eminence in tire production of Akron and the territory of Ohio over other industrial centers was already evident at the beginning of the century and was consolidated in the following three decades, just before the drastic changes that the economic crisis would set off in the sector. In second place within this ranking—and with unequal competition—was the State of New Jersey and its capital Trenton, which had once occupied the top of the list. In 1922, according to a study by the Department of Commerce, New Jersey ranked third out of the states producing solid rubber tires, tire covers and inner tubes, surpassed by the state of Massachusetts and led by Ohio.[21] Between 1919 and 1925 the number of companies in Ohio was 109, 27 of which were in Akron. In the state of New Jersey, less than half of this number was observed, exactly 49 companies, 18 of which were located in the capital of Trenton (**TABLE 1** and **TABLE 2**).

8. Milltown, New Jersey

Milltown, New Jersey, was the location chosen by Michelin in 1907 as headquarters for its American factory. What was the reason for not choosing to establish the firm in flourishing Akron, Ohio? It would seem logical to opt for imitating the roadmap laid out by the large firms in the sector—already consolidated in those years—and to benefit from the advantages that proximity made available.[22] Possibly, two interrelating facts had also influenced the decision, and both refer to the incursion into French territory by two Americans with interests in New Jersey.

On the one hand, there is Aristide Barbier—maternal grandfather of the Michelin brothers—and his cousin Edouard Daubrée, founders of a family business in Clermont-Ferrand in 1832, the progenitor of the company Michelin et Cie. founded in 1889. It is likely that both partners attended the promotional campaign that Charles Goodyear organized on his tour of France, after the successful reception and recognition he had received at the 1851 Universal Exposition held at the Crystal Palace in London. Goodyear decided to invest money in the organization of a great display of products made with vulcanized rubber according to their methods and under the American patent—inactive in France and England after several legal disputes—and participated with the company's own stand at the Universal Exhibition of Paris in 1855. At that time, the U.S. footwear and rubber products industry, manufactured under the Goodyear license, was concentrated in the State of New Jersey.

On the other hand, at the end of 1853 Hiriam Hutchinson, a powerful industrialist from the rubber sector of New Brunswick, arrived in Paris, establishing the first leading footwear factory in France. The knowledge acquired in the Newark India Rubber Co. from Newark, New Jersey—who manufactured under the Goodyear license—allowed him to face the venture with guarantees. To this end he created the Compagnie Nationale du Caoutchouc Souple which was run by the company Hutchinson, Henderson et Cie and built his first factory in the French town of Montargis. They produced footwear under the brand L'Aigle [the Eagle], in honor of the bald-headed eagle, patriotic emblem of his native country.

Thus, both Goodyear and Hutchinson indirectly acted as early ambassadors of their respective entrepreneurial ventures. And it is possible to conceive that for the French industrialists of that time—such as Aristide Barbier[23] and Edouard Daubrée—the words 'American rubber industry' and the location of 'New Jersey' were closely related.[24]

It is also likely that the historical and business background acquired by Michelin in the French town of Clermont-Ferrand influenced the decision to choose between Akron and Milltown. Clermont-Ferrand had a population with specialized labor where Michelin could develop its hegemonic position—with permission from the competitors Bergougnan and Torrillon—and ensure the loyalty of employees in a controlled environment. Business discretion and secrecy were basic rules of the firm, an understandable policy in the face of continuing legal disputes over patents and the development of closely guarded formulas, technology, and processes, which were commonplace in the competitive tire industry.

Milltown's proximity to mining operations in nearby Pennsylvania or to the metal and mineral mines located in the northwest corner of New Jersey were also important considerations. For example, the straight-line distance between Milltown and Essex County where iron and zinc mines operated by the New Jersey Zinc Company were located—zinc oxide was an indispensable product used in rubber vulcanization—was less than 70 kilometers.

Finally, it seems that the ideal location of the factory had to meet a series of peculiar requirements, which made the selection process difficult and delayed the final decision, as demonstrated in a news article published on February 15, 1906:

> "(…) the French company have a firm belief that the success of their tires is due not only to the use of good rubber and much skill in manipulation, but that the temperature of the air and the pureness the water at Clermont-Ferrand are also factors." [25]

Notes

1. This date is stated by Andrea C. Dragon in the article listed in the bibliography, although this data varies by a few years depending on the sources consulted. A chronological section on the development of the rubber industry is included in the publication *World's Work* that is listed in the bibliography. It details the following facts: "**1823**. Shipment of 500 pairs of rubber shoes from Brazil received in Boston. They were readily sold at from $3 to $5 a pair [an elevated cost for that period of time]. Crude rubber was five cents a pound." In addition, Babcock (1966, p. 6) states "About 500 pairs are believed to have been brought to Boston in 1825 by Thomas Crane Wales, the first Boston rubber footwear merchant."
2. To distinguish the classic rubber from the new stable and resistant rubber after being vulcanized, Charles Goodyear proposed a new denomination, that of "metallic rubber" or "elastic metal," which was not popularly received and soon became obsolete. Hence the name of the company Metallic Rubber Shoe.
3. Babcock (1966), pp. 25-26. Do not confuse the Goodyear Rubber Co. of Massachusetts, founded in 1858 by Frederick M. Shepard and manufacturer of rubber footwear, with The Goodyear Tire & Rubber Company of Akron, created on August 29, 1898 which was unrelated to Charles Goodyear—his surname was used more as a tribute—and had no association with the previous company.
4. "The rubber trade in Trenton," *The India Rubber World*, April 1914, p. 360.
5. *The India Rubber World*, August 1915, p. 621.
6. A newspaper article published in *The New York Times* on July 23, 1899 pointed out the negotiations for the purchase of the Empire Rubber Company, conducted under the former mayor of Trenton and prominent businessman Frank A. Magowan. It was suspected that, under the backing of New York capitalist partners, this action was intended to concentrate the interests of the ten large rubber industry companies operating in Trenton, similar to what had been previously done—also with Magowan as the intermediary—with the major ceramic manufacturers.
7. The original winning phrase was actually "The World Takes, Trenton Makes" as was shown in the original poster published in 1911 by the company R. C. Maxwell Sign. In 1917, the order of the phrase was reversed with the replacement of the deteriorated letters in a new luminous poster. In 1928, the complete demolition of the old bridge occurred, being replaced by a new structure to which seven years later a new signboard was added. The bridge and the letters integrated throughout its structure continue to exist today.
8. Bergen Mills was located about 4.8 km from New Brunswick, on the northwest bank of the Lawrence Brook river. The business had remained active since before 1769 and was acquired in 1811 by Jacob Bergen. It was equipped with presses and stones to grind grain and serviced farmers in the area. The settlement consisted of barely twenty people, with their respective houses and a local tavern. In 1812, Bergen renovated the obsolete infrastructures, modernizing them and advertising their services in a local newspaper. The advertisement is the first written document describing the area of the settlement under the name of Milltown.
9. In some texts, Lewis LeGrand Hyatt also appears as Elias C. Hyatt, when he is featured and biographical facts are cited. An example can be seen in the 1896 article on "History of the rubber industry in New Brunswick, New Jersey," listed in the bibliography.
10. The New Brunswick Rubber Co., dedicated from the outset to the production of footwear, was legally established on April 18, 1850. Among its founders was James Bishop, a partner of Meyer in other businesses within the sector. In 1892, the company was acquired by United States Rubber and immersed in a process of constant expansion, reorganization and redistribution. At the beginning of 1896 the factory definitively ceased its footwear production and it was reconverted into a factory

manufacturing solid rubber tires for bicycles, changing its commercial name to the New Brunswick Tire Co. But hardly five years later it closed in 1901, due to low profits in a saturated market which was steadily declining after the turn of the century, partly due to the unstoppable growth of new motor vehicles. The factory was sold to the Rubber Goods Manufacturing Co., a corporation that included powerful firms engaged in the manufacture of solid rubber and pneumatic tires. This corporation, in turn, would be acquired in 1905 by United States Rubber who, with this operation, would extend its dominion within different branches of the sector and validate its full incorporation into the tire business.

11. One of these pioneering companies, and little remembered, was that created by Michigan racing cyclist Louis de Franklin Munger. In 1894, he began his first great business venture—which was short-lived, lasting only two years—making his own bicycle models in the Munger Cycle Mfg. Co. The owner of several self-made automobile tire patents, he founded the Munger Vehicle Tire Co. in 1899 and entered into an agreement with the Rubber Goods Manufacturing Co. to occupy its premises in New Brunswick. But a year later the contract was broken and he had to find a new location for the business, which in 1901 had 200 employees. Following unsuccessful negotiations, which included the possibility of transferring production to the Milltown India Rubber headed by John C. Evans, the firm declared bankruptcy and closed in August 1901. Munger continued to be associated with the motor sector in other business endeavors. *The New York Times*, December 6, 1899; *The India Rubber World*, April 1901 and April 1902; *The Daily News* (New Brunswick), July 20, August 2, 6 and 10, 1901, November 10, 1902 and October 28, 1903; Theobald, Mark, "Moore & Munger Co. 1904-1915," 2004, www.coachbuilt.com

12. In a 1916 magazine double-page advertisement, different images of the factories controlled by U.S. Rubber are shown. The accompanying text states: "Pictured here are thirty-four of the forty-seven great factories owned by the United States Rubber Company, the world's largest producer of rubber goods, including Footwear, Clothing, Automobile and Bicycle Tires, Druggists' Sundries, Insulated Wire, Soles and Heels, Belting, Hose, Packing, Mechanical and Moulded Rubber Goods of all kinds." Advertisement "The Fruits of the Rubber Tree," published in *Life* August 3, 1916.

13. "Deaths in the Rubber Trade. John C. Evans," *The India Rubber World*. March 1, 1902, p. 189.

14. "New Brunswick, December 16th, 1900," *Twenty-Fourth Annual Report of the Bureau of Statistics of Labor and Industries of New Jersey, for the Year Ending October 31st. 1901*. Trenton: J. J., 1902, p. 475.

15. *The Automobile and Motor Review*, June 14 and July 19, 1902; T*he Horseless Age*, July 2, 1902.

16. *The Automobile*, February 20, 1904.

17. "International tires and sundries for 1905," *Cycle and Automobile Trade Journal*, November 1904, p. 144.

18. *Cycle and Automobile Trade Journal,* October 1906; and "International Rubber Company," *The Horseless Age*, December 5, 1906.

19. As listed in various 1907 advertisements, for example: *The Horseless Age*, January 9; *Motor Age*, February 14.

20. Klepper and Simons (2000), p. 732.

21. "The New Jersey Rubber Industry," *The India Rubber World*. July 1, 1923, p. 656.

22. "The production factory is being built in Milltown, New Jersey, for three reasons. The first is its location near New York and the major markets of the East. The second is that it is a small village where the staff will form a more reliable organization. The third is it is in a region specializing in rubber products, having the potential of workers trained in this field" (Jouas, p. 66). I agree with most of what is stated above, although it is important to understand and reinforce the decision taken by analyzing the antecedents that have been developed in the chapter and not forgetting that

Akron was already the center of the tire industry at the time Michelin embarked on the scene. The fact that Milltown provides access to Eastern and New York markets is not a decisive advantage over Akron, who had well-established distribution and marketing channels utilized by leading Akron-based companies such as Goodrich, Firestone, or Goodyear. And paradoxically, New Jersey and its factories–and to a lesser extent this was also true of Akron–were not close to the production centers of the emerging automobile industry, as Dragon (1997, p. 270) states: "the infant automobile industry was growing up around Detroit, Chicago, and other cities in Indiana and Ohio, and new automobiles had to be fitted with new tires."

23. In this sense, as Jemain writes (1982), p. 29: "In 1952, Aristide Barbier was appointed by his colleagues in the [French] rubber industry to represent their interests in the Goodyear company, who sought to defend their rights over vulcanization. Barbier will reveal himself as an effective lawyer. Two years later, the Seine district court will dismiss the American claim."

24. The transatlantic venture of Michelin in New Jersey was reproduced—albeit on a less ambitious scale—a dozen years later. The competing French firm Establissements Bergougnan, also established in Clermont-Ferrand, acquired the property and equipment of the American company Delion Tire & Rubber Co. in 1919 and founded the Bergougnan Rubber Corporation on August 1, 1919. Their factory was located in New Jersey, in the town of Trenton, which was 35 km from the Michelin factory in Milltown.

25. "A Michelin Factory for America," *Tire and Motor*, February 15, 1906, p. 37.

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"Goodyear's Metallic Rubber Shoe Co," *The India Rubber World*, June 1, 1902, p. 297.

"The Goodrich Company forty years old," *The India Rubber World*, September 1, 1910, pp. 439-440.

TABLE 1. List of automobile tire companies with headquarters in the State of Ohio and its capital Akron, between 1919-1925

COMPANY	LOCATION
Admiral Tire & Rubber	Coshocton
Amazon Tire & Rubber	**Akron**
American Rubber & Tire	**Akron**
Apollo Tire & Rubber	Cleveland
Ashland Tire & Rubber	Ashland
Best Service Tire	East Palestine
BF Goodrich Rubber	**Akron**
Biltwell Tire & Rubber	**Akron**
Blackwood Tire & Rubber	Cleveland
Brigadier Rubber Tire	**Akron**
Brunswick Tire Corp.	**Akron**
Bucyrus Rubber	Bucyrus
Cable Tire & Rubber	Sandusky
Canton Blackstone	Canton
Cleveland Rubber Corp.	Cleveland
Climax Rubber	Delaware
Coast Tire & Rubber	Oakland
Columbia Tire & Rubber	Mansfield
Columbus Tire & Rubber	Columbus
Cooper Corporation	Findlay
Dayton Rubber Mfg.	Dayton
Diamond Rubber	**Akron**
Denman-Myers Cord Tire	Warren
Dunbar Tire & Rubber	**Akron**
East Palestine Rubber	East Palestine
Englert Tire & Rubber	**Akron**
Erie Tire & Rubber	Sandusky
Excel Rubber	Wadsworth
Falls Rubber	Cuyahoga Falls
Fidelity Tire & Rubber	Massillon
Firestone Tire & Rubber	**Akron**
General Tire & Rubber	**Akron**
Goodale Tire & Rubber	Columbus
Goodyear Tire & Rubber	**Akron**
Giant Tire & Rubber	Findlay
Gordon Tire & Rubber	Canton
Grant Tire & Rubber	Findlay
Hall Tire & Rubber	**Akron**
Henderson Tire & Rubber	Bucyrus
Henry Cord Tire	**Akron**
Hubbell Tire & Rubber	Cleveland
Ideal Tire & Rubber	Cleveland
India Tire & Rubber	**Akron**
Jordan Tire	Cleveland
Kelly-Springfield Tire	Cleveland
Knight Tire & Rubber	Canton
Lambert Tire & Rubber	**Akron**
Lancaster Tire & Rubber	Columbus
L & M Rubber	Carrollton
Longline Tire	**Akron**
Long Wear Rubber	Elyria
M & M Mfg.	Findlay
Made-Rite Rubber Products	Cleveland
Malay Rubber	Cleveland
Manhattan Tire & Rubber	Mansfield
Mansfield Tire & Rubber	Mansfield
Marathon Tire & Rubber	Cuyahoga Falls
Marion Tire & Rubber	Marion
Mason Tire & Rubber	Kent
Master Tire & Rubber	Dayton
Meyer Rubber	Columbiana
McGraw Tire & Rubber	East Palestine
McKone Tire & Rubber	Millersburg
McLean Tire & Rubber	East Liverpool
Midland Tire & Rubber	Coshocton
Milestone Rubber	East Liverpool
Miller Tire & Rubber	**Akron**
Mohawk Rubber	**Akron**
Monarch Tire & Rubber	Canton
National Tire & Rubber	East Palestine
Napeer Tire	**Akron**
New Tread Tire & Rubber	East Palestine
Niles Tire	Niles
Northern Rubber	**Akron**
Ohio Tire & Rubber	Mansfield
Oldfield Tire	Cleveland
Owen Tire & Rubber	Cleveland
Para-Bell Rubber	Columbiana
Perfection Tube	Painesville
Pharis Tire & Rubber	Newark
Polson Rubber	Cleveland
Portage Rubber	Barberton
Porter Rubber	Salem
Prudential Rubber	**Akron**
Republic Rubber	Youngstown
Rubber Products	Barberton
Rufenacht Rubber	Bucyrus
Salem Rubber	Salem
Sea Gate Tire & Rubber	Cleveland
Seiberling Rubber	**Akron**
Silver King Rubber	Sandusky
Stalwart Tire & Rubber	Ashland
Standard Tire	Willoughby
Star Rubber	**Akron**
Studebaker-Wulff Rubber	Marion
Swinehart Tire & Rubber	**Akron**
Talbott Rubber	Ashland
Thomas Rubber	Millersburg
Tourist Tire & Rubber	Cleveland
Triangle Tire & Rubber	Canton
Trump Bros. Rubber	**Akron**
Tuscan Tire & Rubber	Carrollton
Tuscora Rubber	Dover
United Rubber	**Akron**
Victor Rubber	Springfield
Warner Tire & Rubber	Cleveland
Wildman Tire & Rubber	Port Clinton
Williams Tire	**Akron**
Youngstown Tire Mfg.	Youngstown

Number of companies (109) per location:
Akron: 27 companies; Cleveland: 15; Canton and East Palestine: 5; Findlay and Mansfield: 4; Ashland, Bucyrus, Columbus and Sandusky: 3; Baberton, Carrollton, Columbiana, Cuyahoga Falls, East Liverpool, Marion, Millersburg, Salem and Youngstown: 2; and Coshocton, Delaware, Dover, Elyria, Kent, Massillon, Newark, Niles, Oakland, Painesville, Port Clinton, Springsfield, Wadsworth, Warren and Willoughby: 1.

TABLE 2. List of automobile tire companies with headquarters in the State of New Jersey and its capital Trenton, between 1919-1925

COMPANY	LOCATION	COMPANY	LOCATION
Ace Rubber	Union Hill	Hudson Tire	Newark
Acme Rubber	Trenton	Mercer Rubber	Hamilton Square
Aetna Tire & Rubber	Newark	Merrit Rubber	West Orange
Ajax Rubber	Trenton	**Michelin Tire**	**Milltown**
Akaddin Tire	East Rutherford	Murray Rubber	Trenton
Armstrong Rubber	Garfield	National Tire	Trenton
Beacon Tire	Beacon	New Jersey Car Spring & Rubber	Jersey City
Bell Tire	Plainfield	Phelps Tire & Rubber	Garfield
Bergen Rubber	East Rutherford	Princeton Tire & Rubber	Trenton
Bergougnan Rubber Corp.	Trenton	Rubber Insulated Metals Corp.	Plainfield
Braender Rubber Tire	Rutherford	Semple Rubber	Trenton
Century Plainfield Tire	Plainfield	S. H. Rubber Mfg.	Jersey City
Combination Rubber Mfg.	Bloomfield	Smith Rubber & Tire	Garfield
Cortland Tire & Rubber	Belleville	Spartan Rubber	Trenton
Dural Rubber Rubber Corp.	Flemington	Standard Cord Tire	Trenton
Eckrode Rubber	Newark	Stanwood Rubber	Newark
Empire Rubber & Tire	Trenton	Sterling Tire Corp.	Rutherford
Essex Rubber	Trenton	Sturdy Tire & Rubber	Trenton
Eureka Tire	Trenton	Sussex Rubber	Rutherford
Globe Rubber Mfg.	Trenton	Thermoid Rubber	Trenton
Hamilton Rubber Mfg.	Trenton	Trent Rubber	Trenton
Hardman Tire & Rubber	New Brunswick	United & Globe Rubber	Trenton
Hardwear Tire Corp.	Rutherford	Voorhees Rubber Mfg.	Jersey City
Hayward Rubber	Yardville	Zee-Zee Tire & Rubber	Yardville
Howe Rubber	New Brunswick		

Number of companies (49) per location:
Trenton: 18; Newark and Rutherford: 4; Garfield, Jersey City and Plainfield: 3; East Rutherford, New Brunswick and Yardville: 2; Beacon, Belleville, Bloomfield, Flemington, Hamilton Square, Milltown, Union Hill and West Orange: 1.

The companies listed in Tables 1 and 2 produced automobile tires and inner tubes, and does not include those exclusively dedicated to the market of solid rubber tires for trucks and heavy transport.

Data compiled from different sources, including:
– TUFFORD, Henry H. *Tires and Vulcanizing. A Comprehensive and Practical Manual of Rubber Tires, Tire Repairing and Vulcanizing*. Chicago: Frederick J. Drake & Co. Publishers, 1920.
– *The Tire Rate Book*, in the following editions: 1919 (October), 1921 (April), 1923 (April), 1925 (October) and 1927. Quarterly publication produced by The Class Journal Company in New York.

TRENTON, RUBBER'S SECOND CITY.
A sample of Trenton's own claim as the country's second most important city for the rubber industry after Akron is reflected in the news published in 1916 by The India Rubber World, the leading magazine of the rubber industry sector, which announced the following initiative:

"The rubber industry of Trenton will be widely advertised, in the near future, by means of miniature posters or stamps to be affixed to the outgoing mail of every concern connected with the trade. The poster, which is in three colors, shows a tire, in the center of which is the figure of a seringueiro tapping a rubber tree. It is estimated that hundreds of thousands of these stamps or posters will be sent out from Trenton in the next year, thus giving wide publicity to the importance of the rubber industry in this city."

1. Monochrome image of the color promotional stamp issued by tire manufacturers in Trenton, New Jersey during 1916-1917. Published in *The India Rubber World,* October 1, 1916, p. 38.

BOSTON BOOTS. From the Amazon jungles to Pará, from Pará to New York, and from there to Boston.
Such was the importation route for natural rubber manufactured at its origin as boots and bottles made from a single piece. The Boston Rubber Shoe Co. was one of the first factories to produce rubber footwear in American lands, working under license of the vulcanization patent discovered by Charles Goodyear. It was the largest footwear company in America, founded in 1853 as the Malden Manufacturing Co. and renamed Boston Rubber Shoe Co. in 1855. In 1898 it became part of the conglomerate of companies under the control of the United States Rubber Company.

2. Press advertisement of the Boston Rubber Shoe Company, offering the book From Forest to Foot, which explained the processes and products obtained from rubber treatment. Published in *The Youth's Companion,* November 27, 1890.

STEP BY STEP. In the above photograph, the facade of a shoe store from late nineteenth century Boston offers its articles which are arranged on either side of the access door. In the large central poster and in some smaller ones next to the merchandise we can see that shoes and rubber boots are being sold. New Jersey took over Boston lead in the development of the rubber industry and the town of Lambertville, located in that state on the banks of the Delaware River, housed two major footwear industries: the New Jersey Rubber Co. and the Lambertville Rubber Co.

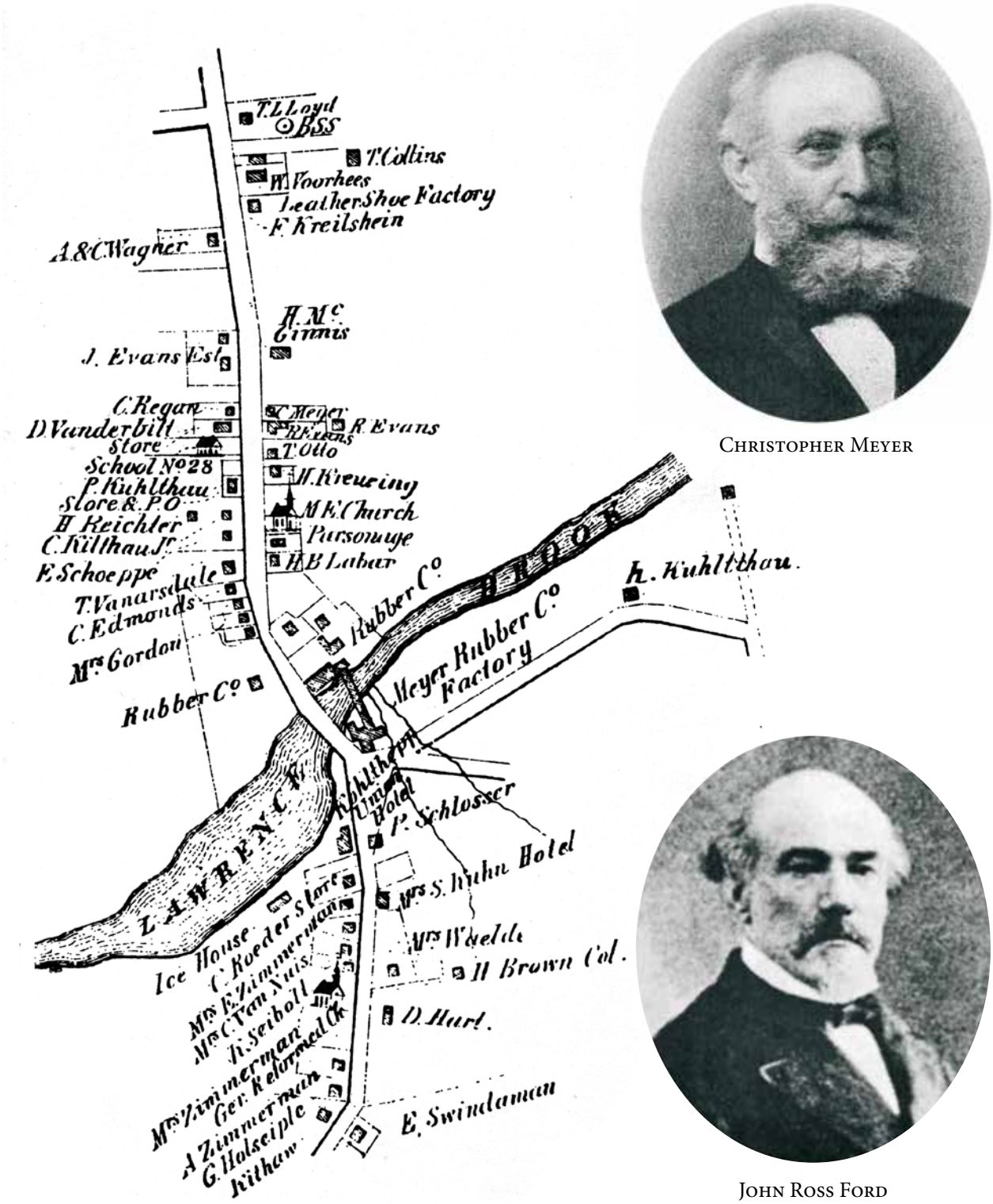
3. Shoe Shop S. B. Thing & Co., c. 1880. 15 x 10 cm. Photograph taken by the Commercial Photo Company of Boston (according to the inscription on the backside of the photo).
4. Advertisement for Snag-Proof boots of the Lambertville Rubber Co. c. 1895. Illustration signed by Palmer Cox (1840-1924), Canadian artist residing in San Francisco and later in New York. He published his stories, poems, and illustrations in books and magazines such as *Life, St. Nicholas, The Ladies' Home Journal,* and newspapers such as the *San Francisco Examiner.* He worked profusely on the advertisements, posters and calendars of the Lambertville Rubber Co. The tiny characters surrounding the waterproof boot, the famous Brownies, are present in almost all of the company's children's books, daily newspaper and Sunday pages as well as in their commercial commissions for other brands. The characters were always male elves, with individualized personalities and dressed according to the cultural and racial stereotypes prevailing at the time.

THE BEAR AND THE TOTS.
The Goodyear Metallic Rubber Shoe Co., established in 1845 with a factory in Naugatuck, Connecticut, was the first industry to introduce an item known as Artics, commercialized under the Wales-Goodyear brand. It was a type of cloth and rubber coating to waterproof footwear, patented by the Bostonian Thomas C. Wales in 1858. A toddler, sitting inside a boot, was the image used in the first advertisements for Wales-Goodyear. Towards the beginning of the 1900s it incorporates the figure of a polar bear wearing rubber boots, adapting it to different promotional and corporate formats, ranging from stationery to exterior signs for shoe shops. The representations that show winter landscapes—typically portrayed in the brand's advertisements—are not gratuitous. It is precisely on ground covered with water, snow and ice where impermeable footwear becomes indispensable. The Goodyear Metallic Rubber Shoe was finally acquired in 1892 by the United States Rubber Co.

5. Promotional postcard for Wales-Goodyear Shoe Co. 15 x 8,5 cm, 1891.
6. Detail of a press advertisement for Wales-Goodyear Rubber products. Published in *The Youth's Companion,* November 5, 1891.
7. Promotional postcard for Wales-Goodyear, c. 1890.

ON FOOT OR ON WHEELS. The image shown here portrays an advertisement for rubber-soled footwear. The feet are protected by shoes with anti-skid rubber soles, just like the motorist who equips the wheels of his vehicle with rubber covers.

8. Advertisement for rubber heeled shoes manufactured by O'Sullivan Rubber Co. In *Collier's* magazine, October 1912.



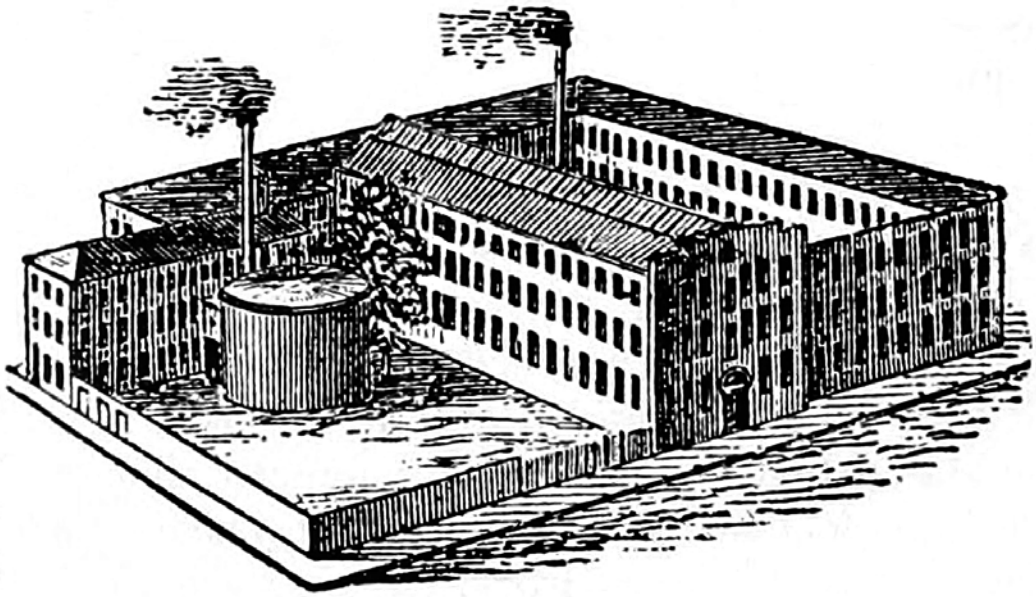
Christopher Meyer

John Ross Ford

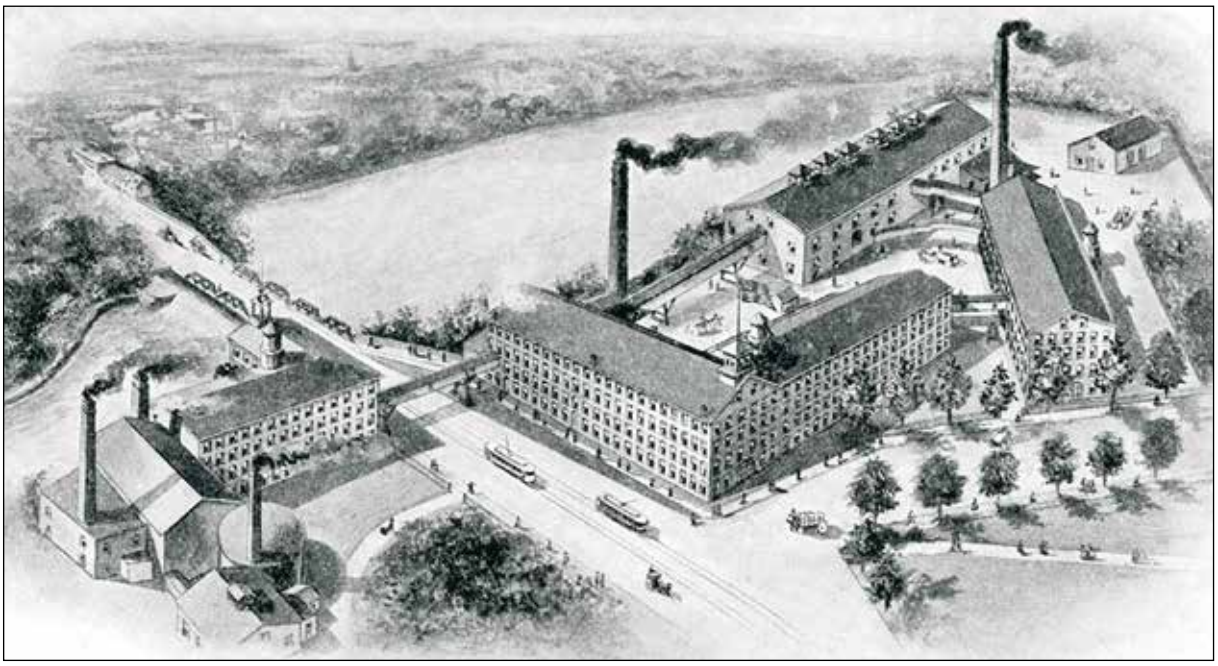
THE MILLTOWN PIONEERS.

Christopher Meyer initiated the rubber industry in Milltown building its first factory in 1843, and the second in 1858. The first factory was burned by a fire in 1845, and that same year Ford & Company established their factory building over its ruins. This factory was promoted by John Ross Ford and remained active until 1861, the year it was absorbed by Meyer. The map of the illustration, from 1876, shows us the layout of the grounds and premises of the various businesses established in Milltown at that time.
The facilities and buildings of the Meyer Rubber Co. crossed over the Lawrence Brook River and occupied both sides of its banks.

9. Map of Milltown in 1876, published in the book *The Story of Milltown*.
10. Portrait of Christopher Meyer published in *The Indian Rubber World,* August 1, 1907, p. 336.
11. Portrait of John R. Ford published in *The Story of Milltown*, p.64.

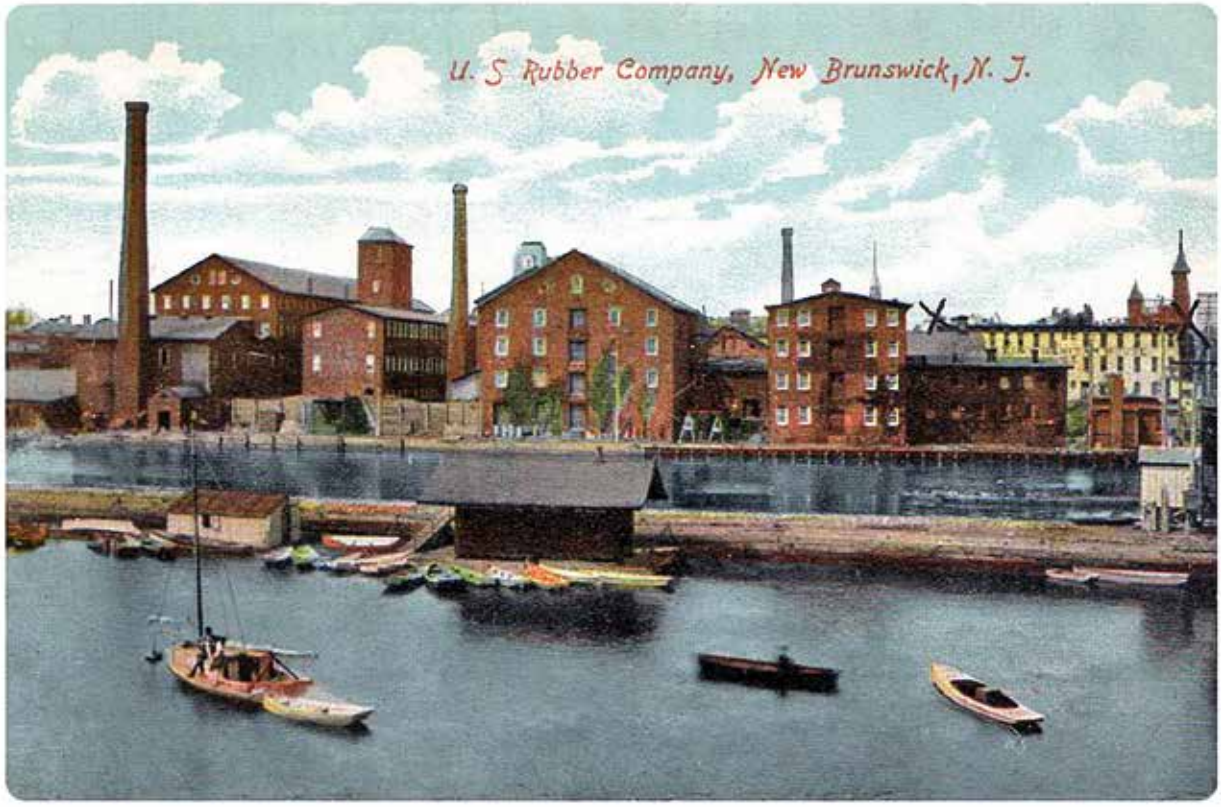


DAY'S NEW BRUNSWICK FACTORY.



FROM MEYER TO MEYER.
The illustration at the top of the page depicts the original factory of Horace H. Day, built around 1838 in New Brunswick, in which twenty-year-old Christopher Meyer worked as an employee. He became the superintendent and familiarized himself with the rubber manufacturing business. That same factory was acquired by Meyer in 1870, leading to its incorporation into his numerous businesses in the sector. One of them was also the former factory of Meyer Rubber Co. in nearby Milltown, created in 1858 and ending production in 1897. The premises were bought in 1902 by a Massachusetts firm, International A. & V. Tire Co. —tire manufacturer for brands such as Fox Brand— which gave new life to the installations, as can be seen in the 1906 illustration, directly above.

12. Illustration of Horace C. Day's factory, published in *The Indian Rubber World,* August 1, 1907, p. 336.
13-14. Illustration of the International Automobile and Vehicle Tire Company's facilities and factory located on the banks of the Lawrence Brook River, published on the cover of *The India Rubber World,* June 1, 1906, and detail of the Fox Brand.

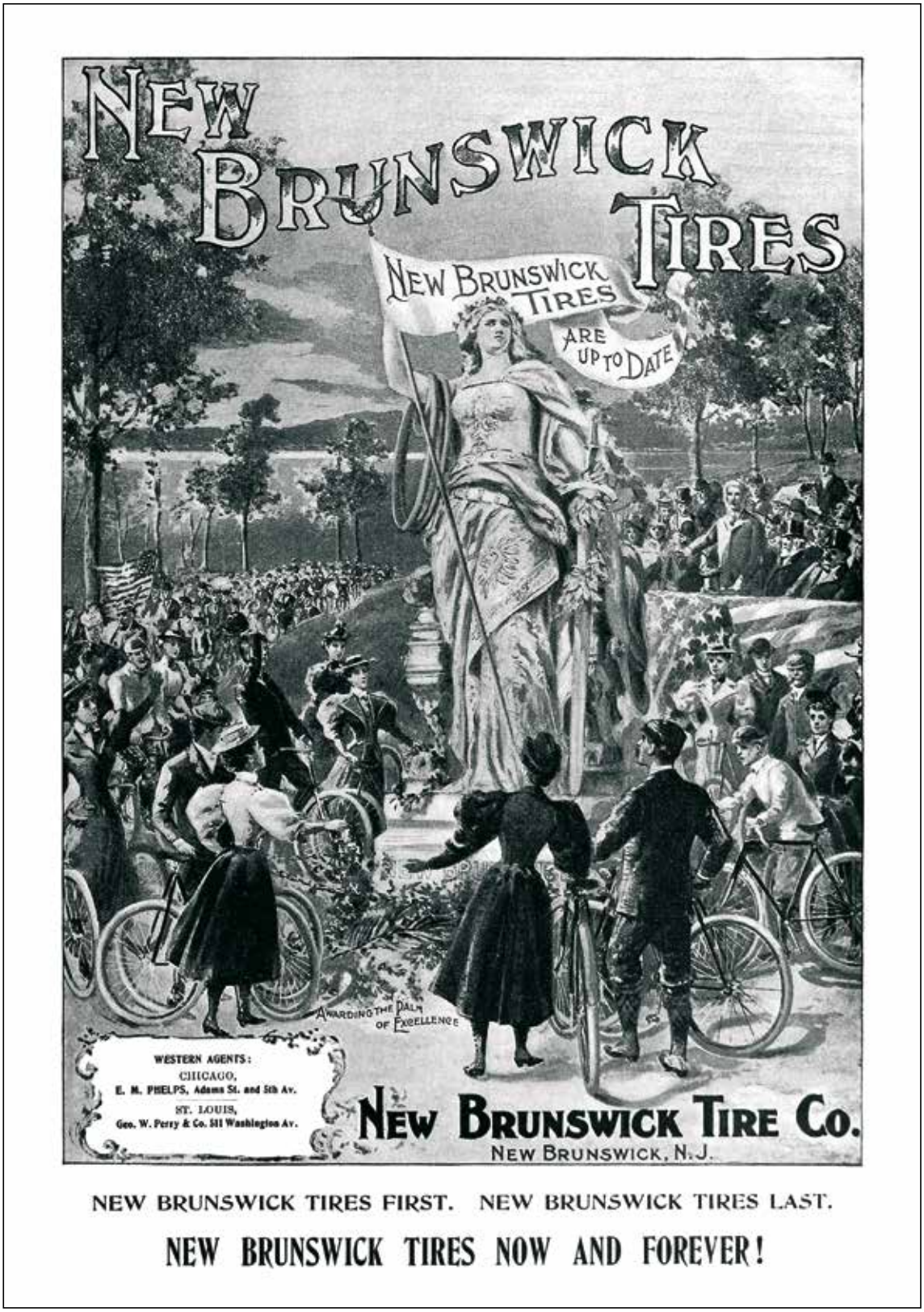


THE NEW BRUNSWICK HEADQUARTERS. In 1892, the industrial complex of the New Jersey Rubber Shoe Co. in New Brunswick became the first acquisition of United States Rubber in its expansion process. The Meyer Rubber Company—also acquired that same year—transferred all its footwear production to this site, thus closing the original factory in Milltown. The New Jersey Rubber Shoe factory remained active until 1929, and the following year the land properties and buildings were sold, some of which housed the facilities of Johnson & Johnson pharmaceutical supply company.

15. Postcard with the colored photographic image of the U.S. Rubber factory in New Brunswick, adjacent to the Raritan River, c. 1906.
16. Full page ad of the series of four promotional postcards edited by Meyer Rubber of New Brunswick, published in *The India Rubber World,* October 1, 1904.

JUSTICE. The New Brunswick Rubber Company used as its corporate and promotional emblem a feminine model which appears to be the result of combining certain attributes of two symbolic representations stemming from classic mythology: Law and Justice. The crowned feminine figure is protected by armor and holds a different weapon in each hand—a sword and a wing-tipped lance—while tires hang from her right arm.

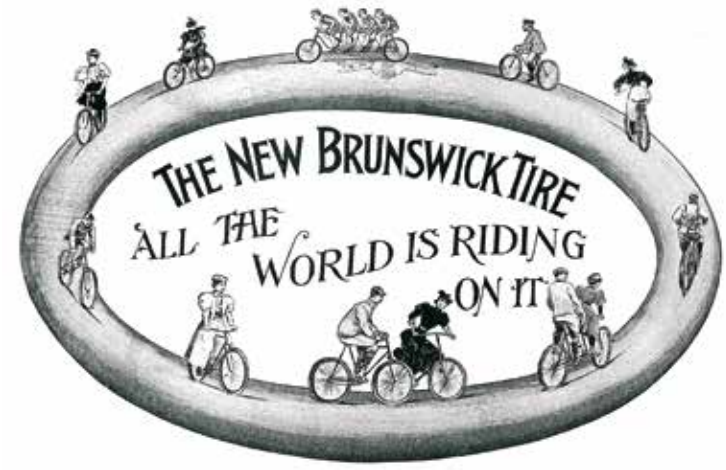
17. Small advertising module in a magazine, 1896.
18. Illustration portraying a section of the inner tube model Volt, for a report published in the magazine *Referee and Cycle Trade Journal,* June 18, 1896.



THE NEW GODS. A renewed allegorical personification, to which an attribute of modernity was added reflecting the bicycle tire technology of that time, was depicted in the New Brunswick Tire Company motto: "New Brunswick Tires Are Up to Date." The scene shown here seems to recreate the inauguration of a monument. Around the statue congregate the cyclist devotees, who stand in line to admire and view it up close. In the background on the right is the stand for officials, where a large group of people are sitting who could represent local authorities attending the event.

19. Full-page advertisement in the magazine *Referee and Cycle Trade Journal* (Chicago-edited weekly), June 11, 1896.

THE TIRE ROUTE.
The New Brunswick Rubber Company had branches and commercial agents in several major cities such as Boston, New York, Chicago and Saint Louis, and was very active in advertising their products. In 1897 they manufactured four models of single-tube tires (tubular, without detachable inner tubes) for bicycles: two with rugged Basket Treads under the brand names Volt and Messenger, and two with smooth treads: Trim and Meteor, all models patented by the company.



20. Advertisement published in the journal *Referee and Cycle Trade Journal,* March 18, 1897
21. Advertisement published in the journal *Referee and Cycle Trade Journal,* January 21, 1897.

CYCLING POSTCARDS.

In 1897 the Brunswick Rubber Co. launched into circulation a series of six photographic postcards, which were sent by mail for those who mailed in two-cent stamps. On the backside of each postcard a different story was featured.

22. Half-page advertisement published in *The Cosmopolitan,* 1897. **23-24.** Promotional postcards, 1897.