

BICYCLE MANUFACTURING AND TECHNOLOGY

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THE FORGOTTEN CONTRIBUTIONS OF CENTRAL ILLINOIS (U.S.A.) TO THE BICYCLE BOOM OF THE 1890s.

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By the end of the nineteenth century, the *U.S. Census of Manufactures* shows that the state of Illinois was home to more than sixty bicycle manufacturers whose output accounted for an impressive 28 percent of the national total. ⁽¹⁾ The census data only gives part of the picture since it only included bicycle companies whose *primary* line of business was bicycle manufacturing. In reality it appears that more than 400 different Illinois companies were involved in bicycle manufacturing during the 1890s.⁽²⁾ Naturally, much of the bicycle industry was located in and around the industrial hub of Chicago. Long forgotten, is the fact that turn-of-the-century Central Illinois also had a vibrant and productive bicycle industry. At that time, Peoria, Illinois, was the second largest city in Illinois and home to a number of substantial bicycle manufacturers including: Ide, Rouse and Hazard, Luthy, and Peoria Rubber and Manufacturing. Peoria-made “high art” bicycles were even exported to European countries and other locations around the world. Charles Duryea, who would go on to invent the first commercially produced American automobile, began his career manufacturing bicycles in Peoria.

In addition to manufacturing, Peoria was also an important stop on the national bicycle racing “Grand Circuit.” During the 1890s, races on Peoria’s Lake View Track attracted the best American riders as well as some international competitors.

Central Illinois played a significant role in the bicycle boom of the 1890s. This role has been largely forgotten and overshadowed by the better-known Chicago history. This paper will discuss the historical significance of Central Illinois bicycle manufacturing and bicycle racing during the 1890s.

The history of the bicycle in America is that of a long series of boom and bust cycles. The first of these booms came in the late 1860s, shortly after the mass production of the French velocipede got underway. In Illinois, indoor velocipede riding schools appeared in both Chicago and Central Illinois between 1867 and 1869. The fad was short-lived. The invention of the high wheel ordinary in the early 1870s followed by the introduction of this bicycle into the USA in the late 1870s would slowly lead to the second of the bicycle booms in America. *The Chicago Bicycle Club* was formed in 1879, and bicycle clubs began appearing in Central Illinois shortly thereafter. The invention of the safety bicycle in the mid-1880s fueled the fire of the great bicycle boom of the 1890s. Safeties were easier to ride, faster, and more comfortable when pneumatic tires were added, and they be-

(1) Axel Josephsson, *The Twelfth Census of the United States. Census Bulletin no. 176*, Washington, D.C., May 31, 1902.

(2) Illinois bicycle manufacturing data compiled by the author. Every attempt has been made to remove companies who simply distributed bicycles or re-badged other companies’ bicycles. Available: <http://tinyurl.com/ILmanufacturers>

came more affordable as production increased.⁽³⁾ By 1898, the *Chicago Bicycle Directory* was able to claim that “Two-thirds of this country’s output of bicycles and accessories comes from within a radius of 150 miles around Chicago.”⁽⁴⁾ Notably, this radius of 150 miles would have included bicycles and bicycle accessories manufactured in Peoria, Illinois.

Located southwest of Chicago along the Illinois River, Peoria in the 1890s was the second largest city in Illinois (population 89,000 according to the 1900 census). Like Chicago, Peoria’s geographical proximity to rivers and railroads led to it becoming a major Midwest manufacturing center. During the 1890s Peoria was home to at least five large bicycle manufacturers: Luthy & Company, Peoria Rubber and Manufacturing, Patee Bicycles, F.F. Ide Manufacturing, and Rouse, Hazard & Company. The names of these manufacturers and some of their bicycle models are not entirely unknown to American bicycle historians, but the scope of their production, innovations, and overall contributions to the boom of the 1890s have been lost to time. The following section will provide a brief summary of each of these Peoria-based manufacturers.

LUTHY & COMPANY

Luthy & Company was founded in 1887 as a manufacturer and distributor of horse-drawn buggies, surreys, farm wagons and agricultural equipment. Like so many other entrepreneurs of the day, they saw the bicycle boom as an opportunity to diversify and increase sales. Luthy & Company produced 1000-2000 bicycles annually from 1894-1900. Most of their bicycles were ornate machines that targeted the high-end of the market. Their factory employed 25-30 people who more than likely also worked on some of the company’s other products. An 1899 Luthy catalog claimed “35-40 World and American records” set on their bicycles. Tellingly, this figure included every single mile between 4 and 26 on an unpaced tandem! Europe was experiencing a similar bicycle boom during this period, but their manufacturers were unable to meet the full demand. Luthy & Company was one American bicycle manufacturer that exported to Europe through a company named Felix Fournier & Knopf who both sold and distributed bicycles through their office in Paris.⁽⁵⁾ [FIG 1]

PEORIA RUBBER AND MANUFACTURING COMPANY

One of the largest Peoria bicycle manufacturers was Peoria Rubber and Manufacturing Company. In 1895, a large factory was built in Peoria Heights to house this new company. They produced bicycles and bicycle tires from 1895-1899. This state-of-the-art factory claimed an annual capacity of 20,000 bicycles and 50,000 tires. Contemporary sources indicate that for a few years the factory actually produced at least 50% of this capacity while employing 400-600 workers. This factory was one of many bicycle “jobbers” in Illinois that during this time built bicycles on contract for other companies. In addition to the jobber bicycles and their very popular Peoria Single Tube tires, Peoria Rubber and Manufacturing also produced at least two of their own bicycle brands: Patee Bicycles and Atalanta Bicycles.



Fig 1 - During the 1890s Luthy bicycles were imported and sold in France by Felix Fournier and Knopf. Source: Online Bicycle Museum: www.oldbike.eu/museum/bikes-1800s/1898-1899/1899-luthy-co-fairy-king/

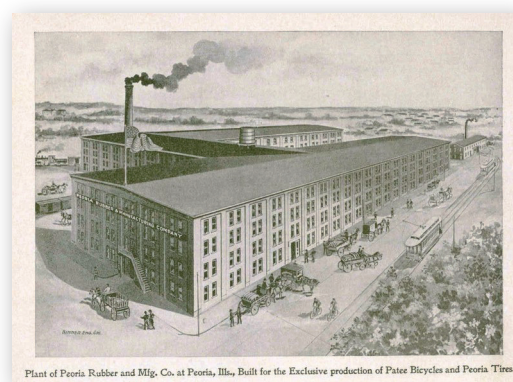


Fig 2 - Built in 1895, the factory of the Peoria Rubber and Manufacturing Company claimed an annual capacity of 20,000 bicycle and 50,000 tires. They made the popular Peoria Single Tube tires as well as Patee and Overland bicycles. Source: *1897 Patee Bicycle Catalog*. Peoria Public Library Local History Collection.

(3) There are many excellent general histories of the bicycle. See: David V. Herlihy, *Bicycle: The History*. New Haven: Yale University Press, 2004, and Jay Pridmore and Jim Hurd, *The American Bicycle*. Osceola, WI, USA: Motorbooks International Publishers, 1995.

(4) *The Chicago Bicycle Directory: A Reference Book of the Trade*. Chicago: Carr & Mensch, 1898, p. 3.

(5) Information regarding Luthy bicycles was found in the following sources:- David McCulloch, *Historical Encyclopedia of Illinois: History of Peoria County*, Chicago: Munsell, 1901-1902, p. 322 and p. 1899 Luthy Catalog.

Surviving catalogs show that Patee was the larger of the two brands having at least eight different models. Like Luthy, Patee bicycles were also exported to Europe. In 1899 Peoria Rubber and Manufacturing was one of many manufacturers purchased by the American Bicycle Trust. Patee Bicycles split off and continued manufacturing bicycles in Peoria for one more year before moving its operations to Indianapolis. ⁽⁶⁾ [FIG 2]

F.F. IDE MANUFACTURING COMPANY

Ferdinand Ide was originally trained as a watchmaker and machinist. In 1892 he managed bicycle manufacturing for Peoria-based Rouse, Hazard and Company. In 1893 he started his own factory and began producing “high art” bicycles. Ide’s training as a watchmaker is evident in his beautiful frames with intricate lugs and lots of nickel plating. They sold at the highest end of the bicycle market with 1895 models ranging from \$100 to \$140. F.F. Ide Manufacturing produced bicycles from 1893-1899. A history of Peoria published in 1902 lists Ide as employing 300 and producing up to 3,000 bicycles annually. Given the number of employees, this factory probably also served as a jobber for other brands.

Ferdinand already had a few patents from his time as a watchmaker. His innovations carried over into bicycle manufacturing. Two of his important bicycle patents were for elliptical spring cranks and a new method for frame lap brazing. In 1894 Ide was awarded U.S. Patent #518456 for his beautiful, but unconventional elliptical spring cranks. These curved crank arms were made of spring steel, and they were designed to straighten out slightly under heavy pressure (when climbing or sprinting) thus increasing their length and leverage. An Ide catalog claimed a 12.5% increase in power and the patent application made the bold claim that the cranks “will not transmit any perceptible jar to the rider.” Some carefully worded catalog copy claimed that “In every hill climbing contest that we have knowledge of, where our machines were used, riders of them took every prize.” This forward-thinking design has been cited multiple times in recent patent applications. [FIG 3]

A second Ide patent for lap brazing was an important advance in bicycle frame construction. U.S. Patent #574734 was applied for in 1894 and awarded in 1897. Previous bicycle frames had to use a heavy gauge of tubing to withstand the forces at high stress areas. Ide’s invention was a frame lug with long overlapping extensions. This invention strengthened the high stress areas of the frame and allowed for the use of lighter frame tubing elsewhere. This feature allowed Ide to manufacture a “Track Racer” model in 1895 that weighed a claimed 18 pounds and a tandem that came in at only 38 pounds. ⁽⁷⁾

ROUSE, HAZARD & COMPANY

Rouse, Hazard & Company was probably the most important of the Peoria manufactures. Before they entered into bicycle manufacturing, they were one of the earliest and largest American bicycle importers and wholesalers. They also gave automotive pioneer Charles Duryea his start in manufacturing with his Sylph and Overland bicycle models. Rouse, Hazard & Company was established as an agricultural implement whole-

saler and distributor in 1864. In 1879, at the beginning of the U.S. highwheel bicycle era; Rouse, Hazard & Company began importing European bicycles to sell alongside early American models. Harry (H.G.) Rouse was a bicycle enthusiast. In 1880, during the formation of the League of American Wheelmen, he was elected the first co-director for the Illinois division. Rouse, Hazard and Company was the first major mail order company to sell bicycles (new and used) on installment plans. This was significant since installment plans fanned the flames of the bicycle boom by making bicycles more affordable for the average American. By 1893, Rouse, Hazard and Company claimed to be the largest and oldest wholesaler in the country. This claim seems plausible since they began selling bicycles in 1879 and by 1893 their warehouse contained 3,800 bicycles and their showroom in downtown Peoria had 300-500 cycles on display. Since much of Rouse, Hazard and Company’s early business was mail order-based, they invested heavily in advertisements in many of the leading cycling publications. [FIG 4]

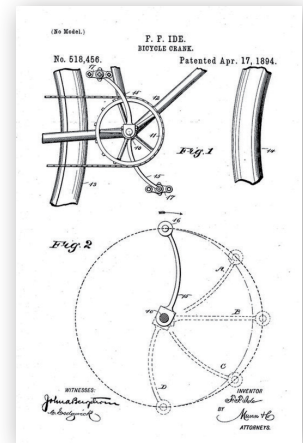


Fig 3 - These drawings for the Ide elliptical crank patent show a rather ingenious design for improving leverage under hard efforts. Source: U.S. patent #518456 www.google.com/patents/US518456

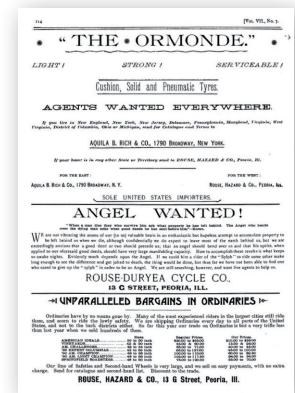


Fig 4 - During much of the 1890s Rouse, Hazard and Company advertisements such as this one could be found in nearly every issue of major cycling publications. Source: Supplement of The Wheel and Cycling Trade Review, Vol. VII, No. 7, April 10, 1891, 214.

- (6) Information regarding Peoria Rubber and Manufacturing Company was found in the following sources: McCulloch, Historical Encyclopedia of Illinois: History of Peoria County, p. 322; Peoria Heights, Illinois Keeping Pace with Progress: Diamond Jubilee, 1898-1973, August 11-18. Peoria Heights, Ill: Peoria Heights Diamond Jubilee Commem. Booklet Comm, 1973; 1897 Patee Bicycle Catalog, Peoria Public Library Local History and Genealogy Collection, Peoria, Illinois.
- (7) Information regarding F.F. Ide manufacturing was found in the following sources: McCulloch, Historical Encyclopedia of Illinois: History of Peoria County, p. 322; Democratic State Central Committee, 1896, A Brief History of Peoria, p. 37-39; 1895 Ide Wheel Catalog, Chicago History Museum.

In 1892 Rouse, Hazard and Company entered the bicycle manufacturing business with their Sylph and Overland brands. American automotive pioneer and Central Illinois native, Charles Duryea designed and oversaw the production of these models. His Sylph bicycles had first been produced by Ames Manufacturing in Chicopee, Massachusetts. Due to production problems he moved operations to Peoria where he had control over the entire process. In 1893 Sylph bicycles won the top honors over many established brands at the Chicago World's Fair. In 1895, a Sylph Track Racer was advertised as weighing an astonishingly low 16 pounds.

By 1893 Rouse, Hazard and Company also became the Official American Rudge Factory. This arrangement was not merely for importing finished Rudge bicycle from England, but rather it included full manufacturing of these bicycles based on Rudge specifications: "We import the English made and finished bearings, forgings, parts, etc. from the parent factory of the Rudge Co. at Coventry, England, to our American Branch Rudge Factory at Peoria; and the machines [i.e., the Rudge bicycles] are assembled and finished according to the latest improved American methods by skilled American workmen under the rigid inspection of American experts of high repute." In 1896 Rouse, Hazard and Company built a large new factory that employed between 300-400 workers and had the capacity of producing 20,000 bicycles per year. Sometime during this time period they also became a major jobber for some of the large Chicago bicycle brands. In 1943 the local *Peoria Star* newspaper reported that Rouse, Hazard and Company had manufactured 222,000 bicycles from 1894 to 1898.⁽⁸⁾ Given the stated capacity of the factory manufacturing that many bicycles would be impossible: rather, 222,000 bicycles sold through their wholesale business during the height of the bicycle boom is quite probable.

By 1900 Rouse, Hazard and Company was out of the bicycle manufacturing business. George Hazard split off to form the Hazard and Doubet Company that took over the manufacturing of Ide bicycles.⁽⁹⁾

Peoria was the epicenter of bicycle manufacturing in Central Illinois during the 1890s. Only the major Peoria manufacturers are covered here; there were smaller manufacturers in Peoria as well as manufacturers in other Central Illinois towns. From 1894-1899 Moline, Illinois, based agricultural giant John Deere sold Deere branded bicycles that appear to have been manufactured by Chicago companies.⁽¹⁰⁾ N.O. Nelson Manufacturing Company made bicycles in the cooperative town of LeClaire, Illinois. Bloomington Manufacturing Company, Harber Bros., and W.J. Matern all made bicycles in Bloomington, Illinois, during the 1890s. Not only did Central Illinois help fuel the great bicycle boom through manufacturing of bicycles and accessories, but it was also the location of wildly popular bicycle races.

BOOM-ERA BICYCLE RACING IN PEORIA

Given Chicago's size and prominence in bicycle manufacturing, it would be easy to assume that the Windy City was also the heart of Midwest bicycle racing. It is true that Chicago's Pullman Road Race attracted huge crowds and grew to include nearly 500

participants. Six day races were also popular attractions at venues such as the Chicago Stadium and the Chicago Coliseum. Notably though, during the 1890s, these Chicago venues featured mostly local and regional cyclists. In contrast, the races on Peoria's Lake View Track consistently brought in the best American riders and sometimes top international cyclists.

The earliest recorded Peoria-area race was in 1881 at the Canton County Fair located southwest of Peoria. At this race, Peorian Stephen Tripp won the mile race in 4:05 minutes.⁽¹¹⁾ The races in the 1890s on Peoria's Lake View track had some of the largest prize purses and the best competitors in the country. Peoria was one of the big stops on the "Grand Circuit" of track races sanctioned by the L.A.W.. Racers on the circuit took the railroads from city to city during the summer racing season. *Spalding's Official Bicycle Guide for 1897* noted that "The three big meets of the year were Louisville, Springfield and Peoria. Peoria has always been a great racing town, but this year it excelled itself. In the three days of racing, June 27-29, every race was hotly contested, and the attendance reached as high as 10,000 a day."⁽¹²⁾ Evenings after the Peoria races included steamboat trips on Lake Peoria featuring dinner, a military band, and dancing. Support from the Peoria bicycle manufacturers and the 400 member strong Peoria Bicycle Club yielded deep prize purses that over the years included thousands in cash, a grand piano, solid gold medals for records, and even a lot to build on in the city of Chicago.⁽¹³⁾

The 1890 L.A.W. National Tournament in Peoria was a particularly significant event. Newspapers across the country carried the news that New Jersey newcomer A. A. Zimmerman had beat the previously undefeated W.W. Windle in both the quarter mile and ten mile races. At the same race Englishmen H.E. Laurie and E.J. Willis arrived with the first bicycles equipped with pneumatic tires. Apparently they were banned from the main races, but allowed to race in exhibition events. At Peoria, Laurie established a new pneumatic tire mile record of 2:27⁽¹⁴⁾ [FIG 5].

While records were being set and established and champions were being toppled, a twelve year old from Indianapolis raced the mile on an ordinary in the boys under sixteen category. Nine years later this same cyclist returned to race in Peoria, this time as a world champion. The cyclist was, of course, African-American cyclist Marshall (Major) Taylor. Chicago's *The Inter Ocean* reported: *The ninth race had a comical side to it. A little colored lad*

(8) *Peoria Star*, May 11, 1943.

(9) Information regarding Rouse, Hazard and Company was found in the following sources: *A Brief History of Peoria, 1896*, p. 37-39; *1893 Rouse, Hazard and Company Catalog*, Peoria Public Library - Local History and Genealogy Collection.

(10) John Deere timeline: www.deere.com/en_US/corporate/our_company/about_us/history/timeline/timeline.page? and Bogans Restoration Services: www.mindspring.com/~dagmara/deere.html

(11) *Peoria Journal Transcript*, Dec. 7, 1930, Sec. 3, p. 6.

(12) S. A. Nelson. *Spalding's Official Bicycle Guide for 1897*. New York, 1896.

(13) *History of the Peoria Bicycle Club*, 1945, p. 5 (Bradley University Library, Special Collections) and *Peoria Journal Transcript*, Dec. 7, 1930, Sec. 3, p. 6

(14) *The Inter Ocean*, Sept. 14, 1890, p. 3, and *Peoria Journal Transcript*, Dec. 7 1930, Sec. 3, p. 6.

was one of the starters and the way he bent over the handlebars and pedaled was a caution. To the exceeding merriment of the spectators the little pickaniny finished a good third.⁽¹⁵⁾ The fact that this race occurred in 1890 is important. This actually pre-dates the start of Taylor's racing career as established in his own autobiography and later biographies by one or two years. In his autobiography, *The Fastest Bicycle Rider in the World*, Taylor wrote, "My next race was in Peoria, Illinois, in the summer of 1892, an event for boys under sixteen. I was fourteen at the time. Although I did not win the race, I was third, but the kindly manner of the public toward me created a lasting impression in my mind."⁽¹⁶⁾ This is certainly not the only instance in Taylor's autobiography where he is loose with the facts. Notably, 1890 is also an earlier start to Taylor's racing career than dates given by his biographers. Todd Balf lists 1891 as the date of Taylor's first race in Indianapolis but Andrew Ritchie says it was "probably" 1892.⁽¹⁷⁾ Actually, Taylor's first memorable race where he was given a head start and managed to win was reported on by the *Indianapolis News* on August 11, 1890, when he was only 11 years old.⁽¹⁸⁾ The Peoria race that Taylor participated in would have occurred in September of the same year.

In any case, similar to other contemporary sources, Taylor recalled Peoria's Lake View track as the site of some of the most important races of the 1890s: "Peoria was the Mecca of bicycle racing in those days. On its historical track all of the fastest riders in the world struggled for fame and glory... It was known throughout the cycling world as one of the finest that ever staged a bicycle race. As a matter of fact the Peoria track, and those in Springfield, Massachusetts; Waltham, Massachusetts; and Asbury Park, New Jersey, were four of the most famous bicycle tracks in the earlier days of cycle racing in this country."⁽¹⁹⁾ Adding to the evidence for Peoria as a major bicycle racing venue is the fact that over the years many cycling records were set in Peoria. Newspapers and cycling publications of the day often claimed these were world records, but given the lack of an international cycling organization to keep track of times from all countries it is probably safer to consider them American records. Records that have been discovered thus far are listed in [FIG 6].

THE SIGNIFICANCE OF CENTRAL ILLINOIS' CONTRIBUTIONS TO THE BICYCLE BOOM

Given the stories and statistics shared here it is clear that Central Illinois played a larger role in the bicycle boom of the 1890s than has previously been documented in the bicycle history literature, but what is the broader historical significance? First and foremost the story of early bicycle manufacturing in Illinois is one piece of the puzzle that explains the rise and fall of all Midwest manufacturing. Bicycle manufacturing was a big Midwest industry during the 1890s. Overproduction caused a sharp crash in the bicycle market and a massive reduction in the number of American manufacturers. Technical innovations such as pneumatic tires, ball bearings, and the process for making stamped parts that were developed for bicycle manufacturing were essential components for the creation of the automobile. In the case of Peoria Tire and Rubber, Charles Duryea used the proceeds from the manufacturing of bicycles to underwrite his early attempts at creating an automobile. The first commercially produced American auto-



Fig 5 - This oversized color poster was printed to advertise the 1890 L.A.W. race in Peoria. Pictured is the track at Lake View Park and top racers of the day including: W.W. Windle, George Hendee, and A.E. Lumsden. Source: Bradley University Library Special Collections.

mobile - the Duryea Motor Trap - was made in a Peoria factory that was churning out bicycles only a few years earlier. In terms of significance to the more specific field of bicycle history, it is clear that the history of the Chicago bicycle industry has come to overshadow the Central Illinois history. As noted, most of the larger Central Illinois manufacturers also served as jobbers and actually made many of the bicycles for better-known Chicago bicycle brands. In general, the output and scope of bicycle manufacturing in Central Illinois during the bicycle boom was much greater than is generally acknowledged. Surprisingly, a goodly portion of bicycles from the major Peoria bicycle brands were exported to multiple foreign countries. A number of technical innovations regarding bicycle construction came from Peoria inventors. And as for bicycle racing, Peoria was certainly one of the important locations for outdoor track racing in the U.S.A. during the 1890s. Certainly, we can say that Central Illinois played a very important role in the American bicycle industry, and in all aspects of cycling in America, in the latter part of the 19th century.

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(15) *The Inter Ocean*, Sept. 13, 1890, p. 3.

(16) Major Taylor, *The Fastest Bicycle Rider in the World: The Story of a Colored Boy's Indomitable Courage and Success Against Great Odds: An Autobiography*. Worcester, Mass: Wormley Pub. Co, 1928, p. 5.

(17) Accounts of Taylor's beginnings as a racer can be found in the following biographies: Todd Balf, *Major: A Black Athlete, a White Era, and the Fight to be the World's Fastest Human-being*. 1st ed. New York: Crown Publishers, 2008), p. 40; and Andrew Ritchie, *Major Taylor: The Fastest Bicycle Rider in the World*. 2nd ed. updated, expanded and illustrated. San Francisco: Cycle Publications/Van der Plas Publications, 2010, p. 16.

(18) *Indianapolis News*, Aug. 11, 1890, p. 4.

(19) Taylor, p. 5 and p. 107.