

## Bicycling & Time: Clocks, Watches, Measuring Instruments and Their Intersectionality

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The history of horology<sup>1</sup> predates by far that of our beloved “bicycle”.<sup>2</sup> They intersect overtly and covertly for a short stretch when comparing the two topics. Bringing their mutual presence together from a historic point of view is the purpose of

this paper. [Figure 1]

Measuring time was a core and integral aspect for the advancement of human civilization. The sand hourglass (Babylon & Egypt ca. 1600 BCE and Europe ca. 800 AD), the sundial (Egypt ca. 1500 BCE), and water clocks (Babylon ca. 1300 BCE) were all primitive time measuring instruments. From



Figure 1. **OUR WORLD** During the 19th century exterior clocks mounted on buildings were a fixture. Here we share the scene of a group of ladies riding towards the sea. Selected because of the clock in the tower is what they all saw. Circa 1897. England.



Figure 2. **ON THE ROAD** A tranquil road scene of cyclists in front of a church. The clock (reading 4:34 p.m.) is mounted in the tower. The group of cyclists have a high wheel bike and a Cripper trike resting aside the lamp post. Circa 1886. England.



Figures 3a, 3b & 3c. **DUEBER** The Dueber Watch Company of Canton Ohio personifies a watch company that also produced bicycles. Covers of their 1896 catalogue are illustrated. Note the back cover has father time being run over by the “modern lady” on her timeless Dueber wheels. The factory appears as an impressive organization and it was. According to this 1898 Munsey’s magazine advertisement the frontage was over one quarter of a mile. The advertisement says a lot as well! Note the text which indicates the bikes are sold directly to the public and freight is prepaid. A nice model at \$55 was a powerful draw when much of the competition was between \$75 and \$100 for similar models. Published 1898. American. (Illustrations from the collection of Patricia Holloway – National Association of Watch & Clock Collectors – Pflugerville, Texas).

the 13th century onwards mechanical clocks developed as a result of the need to synchronize human activities. The 18th century clocks invented by John Harrison in England gave the Royal Navy the ability to accurately assess longitude while at sea, consequently enabling accurate global marine navigation which is directly attributable to “Britannia ruling the waves”. The accuracy of the newly developed railroad watch in the 1890s allowed for safer rail travel which permitted schedules to be properly regulated to avoid collisions. When the bicycle was emerging the clock and watch industries were of a massive scale. [Figure 2]

Reasonably one might point out the first thing that comes to mind with historic bicycling is the wheel. The Neolithic invention of the wheel can be put aside because of its use over thousands of years which all advanced modern societies could never have developed without. The bicycle had great inventions and inventors such as James Starley with his differential gear and



Figure 4. **VERY MODERN AS YOU CAN TELL** This cover for the E. Howard Watch & Clock Co. of Boston and New York incorporates a very modern and lovely Art Nouveau design. The price for their “Howard Racer” was \$125 retail. Another producer of high grade bicycles. Printed 1897. American.

John Boyd Dunlop with his re-invention of the pneumatic tyre. These are but a few examples. Much of the saga of our bicycle has already been well documented. It is however important to summarize that the social, mechanical, urbanization, sport and industrial aspects of bicycling were vital to 19th and 20th century society.<sup>3</sup>

#### There was a seamless synergy of the two groups

Some cycle manufacturers were wholly owned or invested in by clock and/or watch companies. The Dueber Watch Works of Canton Ohio produced bicycles. [Figures 3a 3b & 3c] Their brand of watches was Dueber-Hampden. They used an interesting marketing technique of selling directly to the retail customer. Production began in 1898 and ceased about 1900. The Illinois Watch Case co. was highly invested in the Elgin Cycle Co. (1895-98). Their brand was Elgin. [Figure 4] The E. Howard Watch & Clock Co. of Boston Mass. produced bikes between 1896 and 1898. Their brand was Howard. The Arthur Pequegnat Clock Company (an

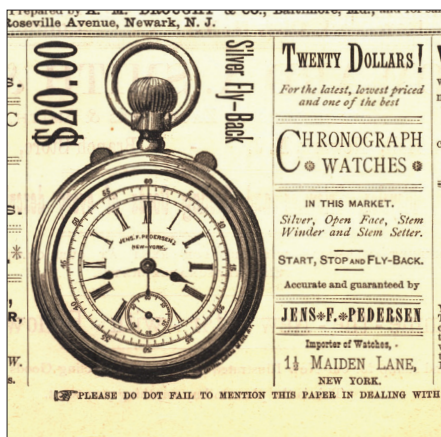


Figure 5. **CONNECTIONS** Many Jewelry stores were already well established to clients potentially wanting to own a bicycle. Jens F. Pederson of New York City was advertising to bicyclists. Here he advertises for the sale of Bicycle, Athletic and Lawn Tennis medals. As per this advertisement he was the maker of the L. A. W. championship medals. One interesting tidbit was that medals for and at races were presented immediately but often needed to be engraved. It was up to the rider to go to a jeweler and have his name and the results memorialized on that medal as the engraving equipment was not usually done at the event. Advertisement from The Cyclist And Athlete. 1886. American.

importer of clocks & watches) of Berlin Ontario branched into producing their Berlin brand of bicycles in 1897. The bicycle division became the Berlin & Racycle Mfr’g Co. in 1900 and had a direct association with the Miami Cycle & Manufacturing Co. of Middleton, Ohio. Pequegnat built and sold the Racycle brand in Canada. For patriotic reasons, after the Great War started the city of Berlin in Ontario Canada changed its name to Kitchener. The family started producing Pequegnat brand clocks (1904-1941) which became one of Canada’s most important clock makers



Figure 6. **A WATCH, CLOCK & BICYCLE SHOP** Welcome to the W. E. FINCH Jewelry and Bicycle Shop. Interesting to see the Cleveland bicycle signage in both the left & right side windows within the shop. There is a figural pocket watch hanging in front of the main entrance door. Illustrates a shop catering to the booming market. Selling bicycles helped insure the proprietor could make a good living in a small town. Bloomville, N. Y. 1896 American.



Figure 7. **YES, WE ARE OPEN FOR ALL YOUR NEEDS.** Photograph is of Woodworth Bro’s Bicycle store. Here is a vendor all set to do business. Store does watch & clock repairs, sells cameras and supplies, sells & repairs bicycles as well as repairs to automobiles. There is even a Real Estate sign at the top of the left side window. One stop shopping. There was a Woodworth Bro’s Bicycle shop at 2 Hartford St. listed in the 1907 & 1909 Newton Mass. city directories. Likely this company. Circa 1906. America.

of the early to mid-20th century. The Rockford Watch Company of Rockford, Ill. produced Rockford bicycles between 1895 and 1896.

Most of the cycle/watch associated factories started producing cycles/cycling-related items around the mid-1890s, but this relationship survived for only a few years. The years between 1893-1898 had the greatest integration of the cycle/horological market. The reasons for the end of the involvement were obvious even at the time. The bicycle boom was over and the market was oversaturated. Consumers were no longer focused on the bicycle as the automobile took the public's fancy. The horological companies easily survived but their bicycle divisions became a burden. The bust was extensive throughout the bicycle market as a whole while the clock and watch industries remained relatively healthy and stable.

Broadly speaking, there was already a connection between the jewelry/clock/watch stores and cycling. That may have been their already ongoing association with jewelry stores. Many of these

jewelry stores were supplying various sports prizes, bicycle club badges, trophies and bicycle medals. Thus some of these jewelry/clock/watch retailers would naturally consider selling and/or repairing bicycles. It may have started as early as the late 1860s, but this connection actually took a stronger hold by the late 1870s as an explosive demand began to take hold in America. **[Figure 5]**

The bicycle boom in rural areas was accelerated with a clock/watch shop selling bicycles since an individual bicycle shop did not have enough of a market to warrant a distinct shop in the area. In many ways the repair of these objects took a similar mindset. Working with small mechanical components was what they could do best. **[Figure 6]**

From the Editor of *The Keystone* (a prominent jewelry, watch, and clock journal) published on Feb. 28, 1896. "I think the bicycle business offers the solution of a serious problem to the jewelry trade. For several years the jewelry business has been languishing, and it has been a very serious matter,

with many of us, as to continuing in a business that was not profitable. The bicycle craze comes along just in the nick of time, and it will save us. ... I see no reason why bicycles should not be sold by jewelers—at least for the present, or until the jewelry trade revives, or until bicycles are sold by every little merchant in other lines of trade and profits are cut to the minimum. .... It is a question whether a bicycle is not as fine a mechanical device as an ordinary eight-day mantel clock--so that I cannot see that the jeweler sacrifices any dignity in selling the finer article. .... Bicycles are sold in the



Figure 8. Selected is a mixture of the types of bicycle design watches which were around in the 19th century. **A** – Two high wheel cyclists riding through a town. Open Face - enamel and silver – stem wind – Precision (brand) – Swiss circa 1887. **B** – Cyclist on Quadrant hard tired safety – Open face Stop Watch – engraved silver – stem wind – Revelator (brand) – England circa 1887. **C** – “Cyclists Watch & Speed Indicator” – Open face - plated plain brass – system for reading the miles per hour - stem wind – circa 1900. **D** – High wheel cyclists knee goes up and down indicating he is racing against two other cyclists – Open Face - Geometric turned back – stem wind – circa 1900. **E** – High wheel cyclist riding along the side of the road while smoking his pipe – Hunter case with Rider made of gold. Niello (mixed black coloured medium) inlaid on silver case. – stem wind – circa 1883. **F** – Hard tired safety rider approaching a sign post within a foliate design – Hunter case – Black enamel and silver – stem wind – circa 1890. **G** – Father and son on a pneumatic safety – Hunter case is inlaid and engraved – 14 K Gold – Stem wind – Elgin Watch Co. – circa 1896.



Figure 9. A **SUCCESSFUL MEET** Photo has our proud cyclist inset to the corner. Since the shotgun is not an object one would have taken on a bicycle ride one can safely assume that the objects he has on “display” are prizes won. Hooked near the top of the shotgun's barrel is a stem wind open face pocket watch. He appears to have also won the shotgun, pistol, hub lamp and a case. That case would have been for a camera and supplies. Bike appears very clean which begs the question as to whether or not he won it as well. In total a good lot of loot. Note the bike is being held up by a stand. These stands were of very commonly used in photo studios to keep objects steady and people still. In velocipede times these and similar stands had clamps to hold people's heads from moving. Albumen Cabinet Card taken by Chatterton and Son of Cherokee & Marcus Iowa. Circa 1886. American.

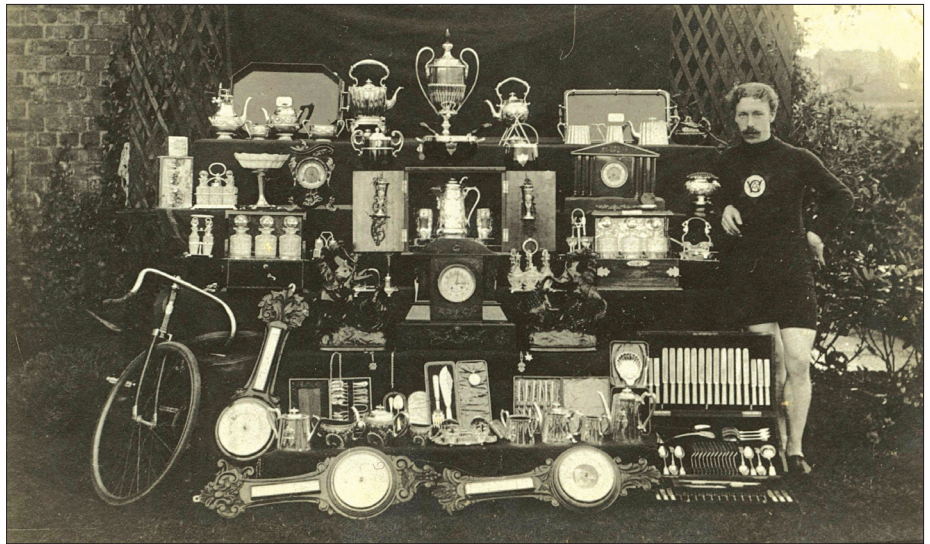
jeweler's dull season (summer), and not sold in his busy season (Christmas). So I say, heaven bless the bicycle-maker and prosper his present customer, the jeweler!" **[Figure 7]**

Jewelers were prompted to sell bicycle cyclometers as a complimentary object when selling a pocket watch to a wheelman. In a Keystone advertisement for April 1896 by The New York Standard Watch Co.: "And isn't it worthwhile to get wheelmen into your store? They have even been known to buy jewelry occasionally, and silverware, and clocks, and there are instances on record of their having jobs which need repairing."

Virtually all bicycle companies had to advertise their products and those with bicycle/horological association were no exception. Companies presented their wares with catalogs, media advertising, and at various trade shows. One of the initial American trade shows where an actual watch and clock company displayed cyclometers was the First National Exhibit of Cycles, Cycle Accessories, and Sundries that was held at Madison Square Garden in New York City from Jan. 19th to 26th of 1895: The New York Standard Watch Co. had a display of cyclometers. At the New England Cycle Show held at Boston, Massachusetts, from Feb. 20th to 27th of 1897 a few of the watch/clock/cycle companies had a presence. An example was a display of Howard cycles by the E. Howard Watch and Clock Co.

Other types of related horological devices were timing and speed measuring instruments. Some riders had watches in holders mounted on their handlebars, or speedometers mounted on their forks and front wheels, and time keepers had their stop watches. **[Figure 8]**

The history of bicycles began in the first half of the 19th century when key wind watches were popular, but by the time of the velocipede era, the key winding function had been replaced by the stem wind mechanism. Watches ranged from the most simple and economic to the highly complex and very costly. A few watch styles, designs, movements, and materials are illustrated. Case styles were generally open face or with a hinged front cover called a hunter. The cases themselves were normally brass (often gold plated), silver, or gold. The cases varied from plain, artis-



**Figure 10. LOOK WHAT I WON** A successful racer to say the least! Headbadge indicates this is a Rudge racing bicycle. At the time, racers could win "prizes" and still maintain their amateur status but they were not allowed to win cash. Often prizes were sold to earn money but it appears in this instance the rider was quite happy owning all this "loot". Why sell what you are so proud of? There are three clocks and three barometers in the scene. As well there is a lot of silver (or silver plated) objects, some barometers, Tantalus (oak framed cabinets with glass decanters) and much more. No photographer identification. Photo taken circa 1898. England.



**Figure 11. WATCH FOBs** Fobs were coupled to watches in order to retrieve them from their pocket. The watch itself generally fit in a breast, jacket or pant pocket. Various materials, designs and lengths were commonplace as illustrated in the accompanying image. **A** – Gold Fob with two clips. One side for the pocket watch and the other for a seal or medallion. 11" long. Piece that looks similar to a high wheel handlebar fit through a jacket button hole. American circa 1895 ~ **B** – Copper Fob with single swivel clasp. Pneumatic safety racing scene. 5" long. American circa 1895. **C** – Gold filled Fob including Mother of Pearl wheel with swivel clasp. Figural Buckle with bicycle front fork holding the wheel. Chain with swivel clasp actually fits behind the mesh and drops below the wheel. 5-3/4" long. No country of origin. Circa 1895. **D** – Brass Fob with swivel clasp. Some traces of gold plating. Circular area is pierced with an early open head Velocipede. 5-1/2" long. No country of origin. Circa 1870. **E** – Brass Fob with enamel and swivel clasp. Lallement style velocipede in the scene. Very early high wheel open head bicycle on the reverse. 5-1/2" long. No country of origin. Circa 1874. **F** – Nickel plated brass Fob with swivel clip for a watch and a circular spring ring for security. High wheel bike scene with riders including one mounting. 10" long. No country of origin. Circa 1885.

tically engraved, enameled, attractively inlaid, or a combination thereof. Some were decorated with cycling themes on the dial or the case. The reason of how or why they were acquired guided the selection. Ownership may have come down to selection for personal use, for having won a race, as a stop watch, or an employee's reward for length of service. Variations were endless. [Figures 9, 10 & 11]

Accompanying the pocket watch were watch fobs. Although we don't think about it today when virtually all watches are 'wristwatches', in the 19th century watches were usually carried in one of the owner's pockets (in a shirt, jacket, or pants pocket). The watch fob was an important accessory allowing the owner to readily retrieve

his watch. The wrist watch did exist in the 19th century, but they were very uncommon. Wristwatches did not become popular until the beginning of the 20th century. [Figures 12 & 13]

Cyclists used their cyclometers (i.e. mileage meters or odometers) to assist in measuring both speed and distance. It was the watch/clock manufacturers that became the primary makers of distance measuring instruments. They had the design technicians, machinery for making small mechanical parts, glass grinding, packaging, and distribution facilities. A perfect marriage. [Figure 14]

Cyclometers suited to velocipedes, high wheel bicycles, tricycles, and early hard tired safeties of the 1870s and 1880s were rather large and bulky items. They fit on axles, cranks, and

hubs. [Figures 15 & 16]

During the pneumatic safety era of the 1890s, one could readily find cyclometers branded by the clock/watch companies. Some branded examples were of the American Clock Co., Ingersoll (Ingersoll Watch Co.), New York Standard (New York Standard Watch Co.), Seth Thomas (Seth Thomas Clock Company), Trenton (Trenton Watch Co.), and the Trump (Waterbury Watch Co.). By about 1894 virtually all the cyclometer products were much smaller than those of the high wheel era. Many types were sold: Some high end models were encased in engraved sterling silver and others had cases made of gold plated brass. Some were plain and simple, but others had intricate multi dial faces. There was a huge market in America.



Figure 12. **RUSSIAN H. W. with WATCH FOB** A Russian high wheel cyclist sporting a fob hanging from his breast pocket. Double Hollow Fork (D.H.F.) cycle. Accessories on the bike include a Salisbury "Victor of the Path" hub lamp and a bell mounted on the spoon brake arm. The tire drive bell is activated by a pull chain causing a small drive wheel to run against the tire. Cabinet card photo taken in Moscow. Circa 1884. Russia.

Figure 13. **OUR MODERN LADY** Our truly modern lady. She and her companion are likely heading out for a spin on their Olympia hard tired safety tandem tricycle. She is wearing a wrist watch on her left hand. Her cap has a cycling club badge. Accessories are a front oil lamp, rear luggage carrier and he has a bell on his handlebars. Cabinet Card albumen photo taken in a studio by Walter Moore of Bristol. Circa 1886. England.

Today collectors find cyclometers to be rather common in America, less so in England and decidedly more uncommon in Europe. To find a reason for these differences, I have spoken with other collectors and come up with the following ideas: Americans had a greater interest in distance than the English and the English were more interested than the continentals. Also, distances between cities were generally well marked

in Europe but only poorly so in America with the result that perhaps cyclometers may not have been wanted by as many cyclists in England and Europe as they were in America. All of this is something to ponder. [Figures 17, 18 & 19]

To compliment the watches are clocks from the late 19th and early 20th Centuries decorated with cycling scenes and paraphernalia. Illustrated are two from the 1890s. Some combined

the clockwork mechanism with barometers and/or thermometers. Rarity, size, material of construction, function, provenance, condition, and design are considerations for the collector of these beautiful objects.

[Figure 20] In summary, the bicycle and horology existed in tandem, and the objective of this paper is to show this clearly by word and pictures.

Note by the Editor: Thomas Stevens carried a watch made by the Waterford Watch Company of Waterford, Connecticut, USA, on his bicycle ride

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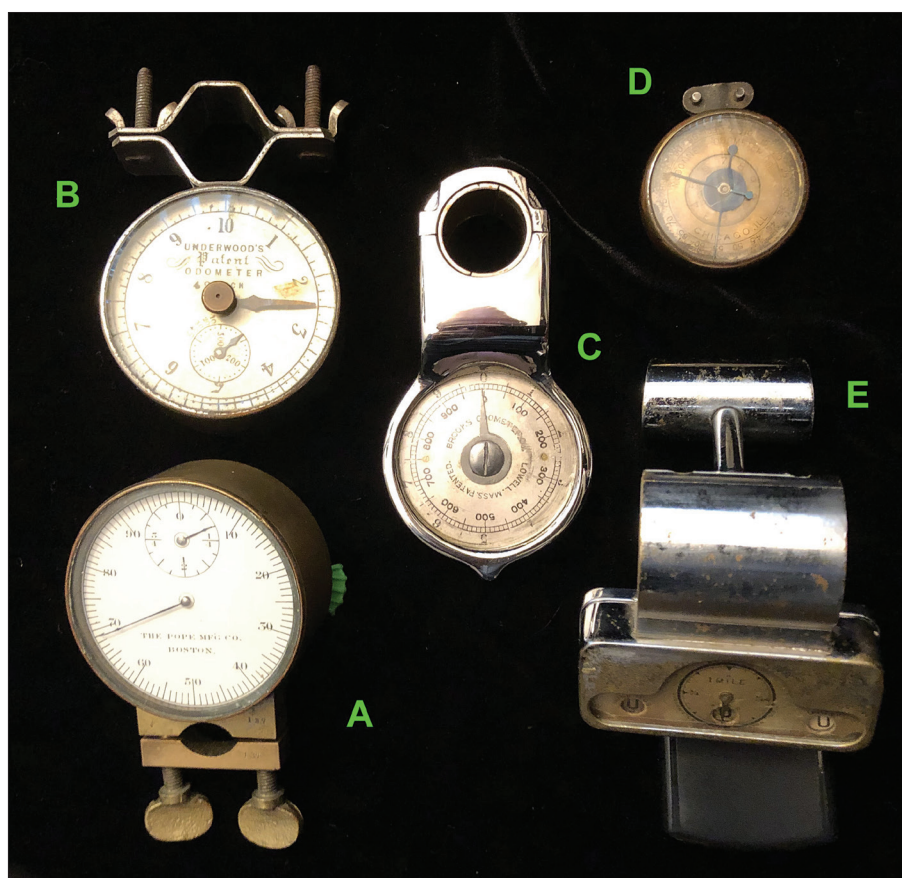


Figure 14. **HIGH WHEEL ERA CYCLOMETERS** Illustrated are 5 models of High Wheel era cyclometers. They were generally bigger and bulkier than those of the safety era. There is every reason to believe these were made in whole or in part by watch/clock companies but this cannot be definitely confirmed at this time. **A** – Model made for The Pope Manufacturing Co. of Boston Mass. clamped to the center part of the front hub. From the 1879 catalog: “A weight within the Cyclometer hangs perpendicularly and so remains while the instrument revolves.” Weighs 312 grams. Originally sold for \$7.00. **B** – Underwood’s Patent Odometer – From the 1884 Tricycles of the Year by H. H. Griffin it reads in part: “...with a large hand making one revolution to every ten miles, a smaller one carrying the score up to 300 miles. It fixes on the axle, is very cheap, and is highly spoken of by those who have tried it.” Weighs 325 grams. Sold for £1 1s. England. **C** – Brooks Ideal Cyclometer – from the 1889 Eagle Bicycle Mfg. Company catalogue: “Being entirely without weights or springs and its few parts being always in gear, it is the least likely to get out of order.” – Weighs 326 grams. Sold for \$5.00 and sent directly to the cyclist. **D** – P. E. McDonnell spoke mount Cyclometer. Patented Feb. 7th, 1882. This example distributed by A. G. Spalding & Bros. From an 1885 catalogue (Robinson – Toronto): “It is no larger than a watch. It tells the exact number of miles driven to the 1/100th of a mile, counts up to 1,000 miles; water and dust tight; always in order;” – Weighs 81 grams. Originally sold for \$4.00 in Canada. **E** – Butcher hub mount Cyclometer – Made by the Butcher Cyclometer Company. Has three openings and a single dial. This example is advertised in The Cycle, as published in Boston on page 169 in the Dec. 24th, 1886 issue and sold for \$10. Weighs 356 grams.

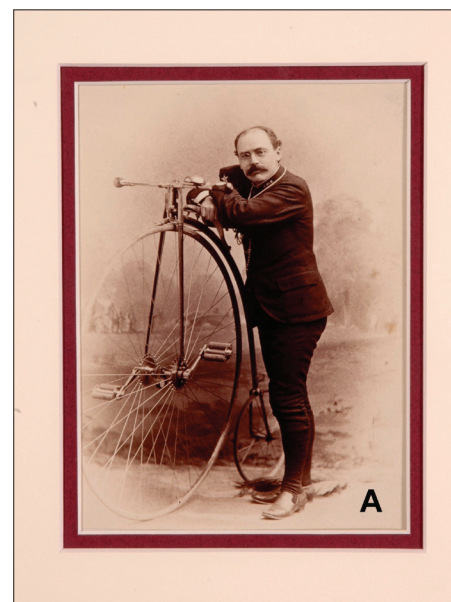
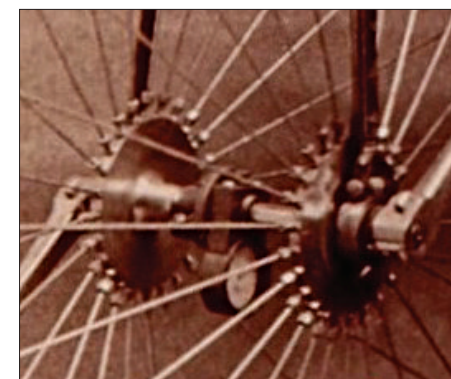
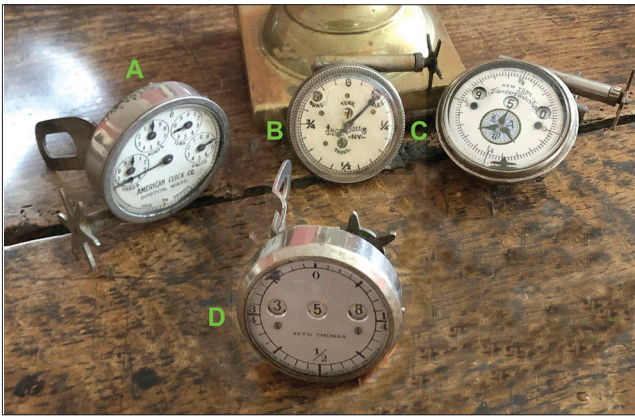


Figure 15. **CHARLES PRATT AND HIS COLUMBIA** Charles Pratt notably was the patent attorney for Albert Pope (of Columbia Bicycle fame) and the first president of the League of American Wheelmen. Here he stands leaning against his 1880 model Columbia “Standard” with detachable cranks. The hub has a Pope cyclometer mounted (below). He is dressed in his Boston Bicycle Club uniform. Note the B.Bi.C. initials embroidered into the collar. Albumen Cabinet Card by Notman of Boston. Circa 1880. American.





**Figure 16. AMERICAN CYCLOMETERS OF THE 1890s**  
 Illustrated are some examples of factory branded cyclometers made by American watch and clock companies. Their respected brand recognition facilitated penetration of the market. All these were generally produced from the 2nd quarter of the 1890s until the end of the century. These were not only sold in bicycle shops but jewelry stores as well.

**A** – American Clock Company of Boston Mass. – 5 dial up to 10,000 miles – 104 grams. **B** – Ingersoll Watch Company of New York, New York – 1 hand plus 4 openings to 10,000 miles – 82 grams. **C** – New York Standard Watch Company of Jersey City, New Jersey – 1 hand registers at internal rim plus 3 openings to 999 miles – Note advertising on the dial for the League of American Wheelmen - 120 grams. **D** – Seth Thomas Watch and Clock Company of Thomaston, Conn. - 1 hand registers at internal rim plus 3 openings to 999 – 80 grams.



**Figure 17. LET'S SEE HOW FAR WE REALLY WENT** An interesting photo capturing a scene of some Caucasian cycling tourists in Japan. Image taken circa 1894. Cyclometer mounted on the front wheel axle of the forward-facing rider appears to be the model produced by the American Clock Co. See the cyclometer image from the 1890s ~ example "A". Rider furthest to the right is riding a Columbia bicycle.



**Figure 18. ROUND AND ROUND** Bronze and Marble 8 Day French clock about 14-1/2" (37 cm) high with a high wheel cyclist. Features a barometer & thermometer. Both the front and rear wheels revolve with what is called an "Automaton" movement which is concealed within the base. There is no connection between the clock's mechanism and that for the revolving of the wheels. Key wind. Circa 1891. France,



**Figure 19. FOR MY VANITY TABLE** Figural mantle clock of a modern lady cyclist in bloomers standing in front of her bicycle. The bicycle is a man's diamond frame. She is holding up a circular wreath which has the clock mounted within. A pair of birds decorate the top (one with wings extended). Castle in the background at the top right. Maker is Unghans. Thumb wind. 8-3/4" tall. Gold plated cast spelter frame. Circa 1898. Made in Germany.

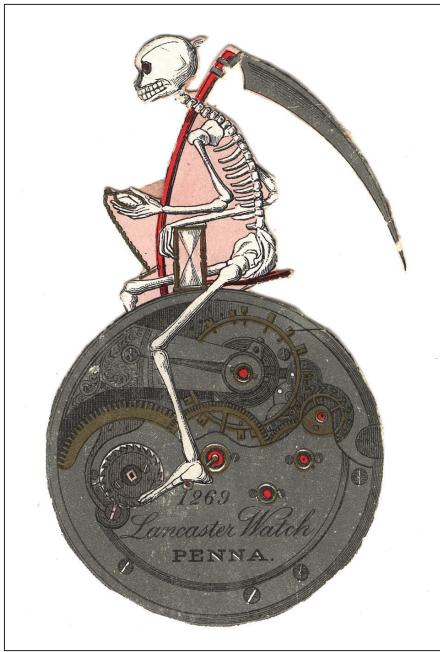


Figure 20. **ITS ONLY A MATTER OF TIME** "Grim Reaper" on his high wheel bicycle. All things come to an end. Has a lot of symbolism. He has a pocket watch in his right hand and his left hand is leaning on a sand timer. Very unusual design created by an excellent artist. Note the lack of a handlebar, forks, backbone and rear wheel but he still is able to convey a high wheel cyclist in motion. Skeleton has his foot on the pedal. Created by the Lancaster Watch Co. of Lancaster Pennsylvania (in business from 1879-1886). Object is 3-1/8" tall. Die cut ephemera. Circa 1885. American,

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around the world in 1884 through 1886. The loud ticking of this watch drew considerable attention from his various hosts, especially in the Middle-East where watches were rare at that time.<sup>4</sup> [Figure 21] ●

**Acknowledgements**

It is again an honor and a pleasure to thank fellow collector and friend *John Weiss* of Piedmont California. John has always edited these papers whenever asked and this article was no exception. He gladly shares his perspectives and knowledge of historic cycling which always enhance these articles. I cannot



Figure 21. 19th Century Waterbury Watch.

thank John enough for his valued input.

*Ben Orszulak* of Grimsby Ontario Canada who prodded me to do a presentation in Nov. 2018 for his Canadian chapter of the National Association of Watch and Clock Collectors. His encouragement for the presentation was the genesis of this article.

*Patricia Holloway*, Fellow, National Association of Watch & Clock Collectors of Columbia Pennsylvania whose article "Horology & Bicycles" from Jan.-Feb. 2019 gave me a broader perspective of the topic which widened the scope of my article. "Pat" has graciously let us use her images of the Dueber Watch company which also helped enhance this article.

*Gary Sanderson* who was so considerate with his time, extended publication date as well as all the work he did in editing my paper. He does so much for us all.

**End Notes:**

- 1 Horology definition of: The art of making clocks and watches, or the art and science of measuring time.
- 2 For purposes of simplicity, the meaning of bicycle in this paper refers to most types of manumotive cycles such as bicycles, tricycles, quadricycles, etc.
- 3 The majority of text and illustrations in this paper refers to, and illustrates, the American market. Similar circumstances existed internationally.
- 4 Gary W. Sanderson, "More About the Items that Thomas Stevens Carried", *The Wheelmen Magazine*, Issue No. 69 (November 2006), p. 4-5.

**Conference Flash Back**



During the 2016 ICHC in North Haven, Connecticut, USA, some of the conference attendees went to Ansonia, a small town just to the north, to show their vintage machines at a street fair and to retrace the route of the first ride of a velocipede in America that was made by Pierre Lallement in 1866.