

## The History of Cycling

1493

A student of Leonardo Da Vinci sketched an idea for a bicycle.

1817

Drais running machine, the 'Draisine'. It was also called the 'hobby horse' because it competed with horses for transport. It was popular in Europe and North America and didn't have any pedals. Instead the riders pushed against the ground with their feet to move along.

1860s

The French velocipede was also called 'bone shaker', because it had such hard wooden wheels and was rough to ride on old roads and cobblestones. There was a major breakthrough when pedals were added to the front wheel of a running machine. Again, the 'bone shaker' was a huge craze in Europe and North America, where special schools were set up to teach people how to ride.

1870s

The British penny farthing was named because it looked like two British coins, the large penny in front and the small farthing behind. The penny farthing used several new inventions to make it much better than the bone shaker. They used tubular steel frames that were light, strong and cheap. The wheels and pedals had ball bearings that allowed them to spin smoothly and lasted a long time. Wheels had previously used wooden spokes which were much stronger and heavier than needed. On the penny farthing they used wire spokes, which were a major breakthrough as the wheels were not only much lighter, but were also able to be repaired easily. Adding solid rubber tyres to the outside of the wheel gave the wheels more grip and made the ride smoother by absorbing some of the bumps.

The reason penny farthings had a large front wheel and tiny rear wheel was for speed. Because the pedals were connected directly to the front wheel and had no chain or gears, cyclists (or wheelmen as they were called then) increased the diameter of the front wheel to go further for each pedal stroke. They then had to reduce the size of the rear wheel so they could get up onto the bike. The result was a fast bicycle that was difficult and dangerous to ride, because it was easy to tip off the front if the bike hit a bump.

1880s

The Safety Bicycle was designed to be a safer alternative to the penny farthing. First, the inventor shifted the pedals to below the seat and added a chain to turn the rear wheel. This meant that the front wheel could be smaller, so the bike wouldn't tip as easily. A few years later bike builders settled on the diamond shaped frame as the lightest and strongest design. At the end of the 1880s a Scottish veterinary surgeon named Dunlop invented air-filled tyres like we use now, which made the bicycle faster and more comfortable to ride than with wooden or solid rubber wheels. Now bikes looked and worked a lot like they do today, and became hugely popular. Bike factories couldn't keep up with demand, so other factories such as sewing machine companies and gun companies started making

bicycles as well. As more bikes were made, the prices dropped and by the end of the century bicycles ruled the roads of every European and American city. This was the 'golden age of cycling'.

#### 1887

Suspension bikes, like the Whippet Anti-Vibrator Machine, were invented to make riding more comfortable. They became redundant when Dunlop invented air-filled tyres, and as roads became smoother. Many other strange bikes were also invented over 100 years ago. Tandems and tricycles were common in the cities, and pedal powered boats and planes have also been built.

#### 1900s

Three speed bikes were first manufactured by Sturmey Archer in England to help people ride up hills. The three gears were all in the hub at the centre of the rear wheel.

#### 1930s

There was another boom in cycling during the great depression, because many people could not afford cars. Popular bikes of the decade were called 'cruisers', 'clunkers', or 'bombers' and many years later people started to use these old bikes as the first mountain bikes. They had fat balloon tyres.

#### 1960s

Millions of small wheeled bikes were made all around the world. They had high handle bars, small wheels and looked similar to the type of cool motor bikes that were made in the USA. In New Zealand the most popular bikes were the Chopper and Raleigh 20, and almost every kid in the western world had one or wanted one.

#### 1970s

Ten speed bikes boomed. These were modelled on road racing bikes, and had dropped handle bars, derailleur gears and skinny tyres to go faster on sealed roads. They were purely designed for speed, and were not very safe or comfortable.

#### 1980s

BMX (Bicycle Motocross) bikes were popular with kids in the early 80s. The sport was well organised and tracks were built throughout the country. Then, in the late 80s mountain bike sales began to grow in New Zealand. Since then mountain bike sales have kept growing because they are good for lots of things - great for off-road riding as well as riding around town. In developing countries bicycles rule the roads. In 1987 China produced 300 million bicycles, compared with 1.2 million cars.

#### 1990s

Mountain bikes boom. Bike companies put lots of effort into technology to build lighter frames, better brakes, more gears, and suspension. One of the reasons for their popularity is that mountain bikes are useful in many different ways. In fact, most mountain bikes are ridden on the road.

### Walking Machine

In 1817 Baron von Drais invented a walking machine that would help him get around the royal gardens faster: two same-size in-line wheels, the front one steerable, mounted in a frame which you straddled. The device was propelled by pushing your feet against the ground, thus rolling yourself and the device forward in a sort of gliding walk. The machine became known as the Draisienne or hobby horse. It was made entirely of wood. This enjoyed a short lived popularity as a fad, not being practical for transportation in any other place than a well maintained pathway such as in a park or garden.



### The Velocipede or Boneshaker

The next appearance of a two-wheeled riding machine was in 1865, when pedals were applied directly to the front wheel. This machine was known as the velocipede ("fast foot"), but was popularly known as the bone shaker, since it was also made entirely of wood, then later with metal tires, and the combination of these with the cobblestone roads of the day made for an extremely uncomfortable ride. They also became a fad, and indoor riding academies, similar to roller rinks, could be found in large cities.



### The High-Wheel Bicycle

In 1870 the first all metal machine appeared. (Previous to this metallurgy was not advanced enough to provide metal which was strong enough to make small, light parts out of.) The pedals were still attached directly to the front wheel with no freewheeling mechanism. Solid rubber tires and the long spokes of the large front wheel provided a much smoother ride than its predecessor. The front wheels became larger and larger as makers realized that the larger the wheel, the farther you could travel with one rotation of the pedals. You would purchase a wheel as large as your leg length would allow. This machine was the first one to be called a bicycle ("two wheel"). These bicycles enjoyed a great popularity among young men of means (they cost an average worker six month's pay), with the hey-day being the decade of the 1880's.

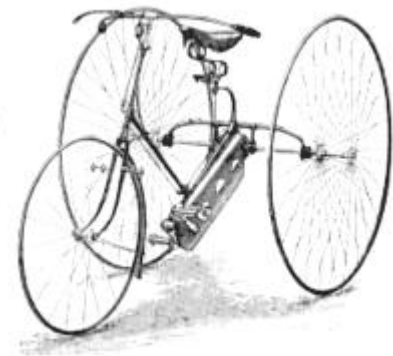


Because the rider sat so high above the center of gravity, if the front wheel was stopped by a stone or rut in the road, or the sudden emergence of a dog, the entire apparatus rotated forward on its front axle, and the rider, with his legs trapped under the handlebars, was dropped unceremoniously on his head. Thus the term "taking a header" came into being.



### The High Wheel Tricycle

While the men were risking their necks on the high wheels, ladies, confined to their long skirts and corsets, could take a spin around the park on an adult tricycle. These machines also afforded more dignity to gentlemen such as doctors and clergymen. Many mechanical innovations now associated with the automobile were originally invented for tricycles. Rack and pinion steering, the differential, and band brakes, to name a few!



### The Highwheel Safety

Improvements to the design began to be seen, many with the small wheel in the front to eliminate the tipping-forward problem. One model was promoted by its manufacturer by being ridden down the front steps of the capitol building in Washington, DC. These designs became known as high-wheel safety bicycles. Since the older high-wheel designs had been known simply as bicycles, they were now referred to as "ordinary bicycles" in comparison with the new-fangled designs, and then simply as "ordinaries."



### The Hard-Tired Safety

The further improvement of metallurgy sparked the next innovation, or rather return to previous design. With metal that was now strong enough to make a fine chain and sprocket small and light enough for a human being to power, the next design was a return to the original configuration of two same-size wheels, only now, instead of just one wheel circumference for every pedal turn, you could, through the gear ratios, have a speed the same as the huge high-wheel. The bicycles still



had the hard rubber tires, and in the absence of the long, shock-absorbing spokes, the ride they provided was much more uncomfortable than any of the high-wheel designs. Many of these bicycles of 100 years ago had front and/or rear suspensions. These designs competed with each other, your choice being the high-wheel's comfort or the safety's safety, but the next innovation tolled the death of the high-wheel design.

### The Pneumatic-Tired Safety

The pneumatic tire was first applied to the bicycle by an Irish veterinarian who was trying to give his young son a more comfortable ride on his tricycle. This inventive young doctor's name was Dunlop. Sound familiar? Now that comfort and safety could be had in the same package, and that package was getting cheaper as manufacturing methods improved, everyone clamored to ride the bicycle. This 1898 Yale uses a shaft drive to dispense with the dirty chain.



The bicycle was what made the Gay Nineties gay. It was a practical investment for the working man as transportation, and gave him a much greater flexibility for leisure. Ladies, heretofore consigned to riding the heavy adult size tricycles that were only practical for taking a turn around the park, now could ride a much more versatile machine and still keep their legs covered with long skirts. The bicycle craze killed the bustle and the corset, instituted "common-sense dressing" for women and increased their mobility considerably. In 1896 Susan B. Anthony said that "the bicycle has done more for the emancipation of women than anything else in the world."

Bicycling was so popular in the 1880s and 1890s that cyclists formed the League of American Wheelman (still in existence and now called the League of American Bicyclists). The League lobbied for better roads, literally paving the road for the automobile.

### The Kids' Bike

Introduced just after the First World War by several manufacturers, such as Mead, Sears Roebuck, and Montgomery Ward, to revitalize the bike industry (Schwinn made its big splash slightly later), these designs, now called "classic", featured automobile and motorcycle elements to appeal to kids who, presumably, would rather have a motor. If ever a bike needed a motor, this was it. These bikes evolved into the most glamorous, fabulous, ostentatious, heavy designs ever. It is unbelievable today that 14-year-old kids could do the tricks that we did on these 65 pound



machines! They were built into the middle 50s, by which time they had taken on design elements of jet aircraft and even rockets. By the 60s, they were becoming leaner and simpler.

[The Current Scene \(too new for a picture\)](#)

Pedaling History has on display even the recent history of the bicycle in America that we are more familiar with: the "English 3-speed" of the 60s and 70s, the 10-speed derailleur bikes which were popular in the 70s (the derailleur had been invented before the turn of the century and had been in more-or-less common use in Europe since), and of course the mountain bike of right now. There are also many oddball designs that never quite made it, including the Ingo (you have to see it to believe it!)

If you'd like to know more about these fascinating machines, you may be interested in the book [Collecting and Restoring Antique Bicycles](#), by G. Donald Adams.

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