

# Bicycles!

by  
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Anyone can attest to their popularity these days, but bicycles have had their ups and downs over the years...and they go back *a lot* of years!.



There are several early, but unverified, claims for the invention of bicycle-like machines. The earliest comes from a sketch said to be from 1493 and attributed to Gian Giacomo Caprotti, a pupil of Leonardo da Vinci. In 1998, Hans-Erhard Lessing described this as a purposeful fraud. However, the authenticity is still vigorously maintained by followers of Prof. Augusto Marinoni, entrusted by the Commissione Vinciana of Rome with the transcription of da Vinci's Codex Atlanticus.

Later, and equally unverified, is the contention that Comte de Sivrac developed a *célérifère* in 1791, demonstrating it at the Palais-Royal in France. The *célérifère* supposedly had two wheels set on a rigid wooden frame and no steering, directional control being limited to that attainable by leaning. A rider was said to have sat astride the machine and pushed it along using alternate feet. It is now thought that the two-wheeled *célérifère* never existed (though there were four-wheelers) and it was instead a

1886 Swift Safety Bicycle



misinterpretation by the well-known French journalist Louis Baudry de Saunier in 1891.

The first verifiable claim for a practically used bicycle belongs to German Baron Karl von Drais, in Germany. Drais invented his Laufmaschine ("running machine") of 1817 that was called Draisine (English) or draisienne (French) by the press. Karl von Drais patented this design in 1818, which was the first commercially successful two-wheeled, steerable, human-propelled machine, commonly called a velocipede. On his first reported ride from Mannheim on June 12, 1817, he covered eight miles in less than an hour. Constructed almost entirely of wood, the draisine weighed 48 pounds, had brass bushings within the wheel bearings, iron shod wheels, a rear-wheel brake and 6 inches of trail of the front-wheel for a self-centering caster effect. Several thousand copies were built and used, primarily in Western Europe and in North America. Its popularity rapidly faded when, partly due to increasing numbers of accidents, some city authorities began to prohibit its use.

In the 1820s-1850s there were many developments concerning human-powered vehicles often using technologies similar to the draisine, even if the idea of a workable 2-wheel design, requiring the rider to balance, had been dismissed. These new machines had three wheels (tricycles) or four (quadracycles) and came in a very wide variety of designs, using pedals, treadles and hand-cranks, but they often suffered from high weight and high rolling resistance. However, Willard Sawyer, in Dover, successfully manufactured a range of treadle-operated 4-wheel vehicles and exported them worldwide in the 1850s.

The first mechanically propelled 2-wheel vehicle is believed by some to have been built by Kirkpatrick MacMillan, a Scottish blacksmith, in 1839. A similar machine was said to have been produced by Gavin Dalzell of Lesmahagow, circa 1845, but here is no record of Dalzell ever having laid claim to inventing the machine, and it is believed that he copied the idea.

The development of the safety bicycle was arguably the most important change in the history of the bicycle. It shifted their use and public perception from being a dangerous toy for sporting young men to being an everyday transport tool for men—and, crucially, women—of all ages. John Kemp Starley produced the first successful "safety bicycle" (a retrospective name), the "Rover," in 1885, which he never patented. It featured a steerable front wheel that had significant caster, equally sized wheels and a chain drive to the rear wheel. Widely imitated, the safety bicycle completely replaced the high-wheeler in North America and Western Europe by 1890. Meanwhile John Dunlop's reinvention of the pneumatic bicycle tire in 1888 had made for a much smoother ride on paved streets.

The impact of the bicycle on female emancipation should not be underestimated. The safety bicycle gave women unprecedented mobility, contributing to their larger participation in the lives of Western nations. As bicycles became safer and cheaper, more women had access to the personal freedom they embodied, and so the bicycle came to symbolize the New Woman of the late nineteenth century, especially in Britain and the United States. Feminists and suffragists recognized its transformative power.

In the late 1960s, spurred by Americans' increasing consciousness of the value of exercise and later the advantage of energy efficient transportation led to the American bike boom of the 1970s. Annual U.S. sales of adult bicycles doubled between 1960 and 1970, and doubled again between 1971 and 1975, the peak years of the adult cycling boom in the United States, eventually reaching nearly 17 million units. Most of these sales were to new cyclists, who preferred models imitating popular European derailleur-equipped racing bikes [ten-speeds]. These lighter bicycles featured dropped handlebars, narrow tires, derailleur gears, five to fifteen speeds, and a narrow 'racing' type saddle. By 1980, racing and sport/touring derailleur bikes dominated the market in North America. [[http://en.wikipedia.org/wiki/History\\_of\\_the\\_bicycle](http://en.wikipedia.org/wiki/History_of_the_bicycle)]