

The Origin of the Bicycle

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The bicycle has provided freedom, and transportation for countless generations throughout the years. The exact origin of the bicycle is shrouded in mystery, and the fact is we may never know exactly when the first bicycle was created. There was a time in the development of the bicycle when it became apparent, that it was possible to raise ones feet off of the ground, and coast along on two wheels while balancing and moving forward at the same time. This eureka moment may have happened by mistake when a Hobby Horse rider inadvertently found themselves careening down a hill out of control, at the same time maintaining their balance. This report examines the question of how did the Hobby Horse evolve into the Bicycle, based on the historical records from the nineteenth century. "The many paths that led to the development of the modern cycle can be traced back as far as antiquity when human-propelled wheeled vehicles were designed and built. Historians will never be able to pinpoint the exact moment the bicycle was created. Tomb paintings from ancient Egypt suggest a distant ancestor of the bicycle. Some researchers maintain that sketches of bicycles can be seen among the frescoes of Pompeii."¹ "Most researchers, though, focus on a much later period, beginning in the late 18th or early 19th centuries. This is when the first bicycle-like devices were built and ridden."²

It was only a matter of time before man figured out a way to travel across land without the aid of animals. After all we had been traveling on water for thousands of years before the invention of the bicycle. There is evidence that a shortage of crops as a result of a bad weather contributed to an increase in there price. For this reason people were looking for alternative means of transportation. Before the invention of the Hobby Horse, the horse was mankind's main mode of transportation on land. The wheel was used in many ways in combination with the horse to carry people and cargo by way of carriages and wagons. The wheel is the key component which led the way in the development of the bicycle. However, when and why the wheel led to the invention of the bicycle is subject to much debate and speculation such as "ON 5 April 1815, Mount Tambora in Indonesia began to grumble. A week later the volcano blew its top in a spectacular eruption that went on until July. It was the biggest eruption in recorded history... In the northern hemisphere 1816 became known as the year without a summer. New England had blizzards in July and crops failed."³ While this weather event was taking place Baron Karl Von Draise coincidently was working on his invention the Hobby Horse.

The evidence linking Drais's invention to Tambora's eruption is only circumstantial but it is persuasive, says Lessing. Contemporary newspapers certainly hinted at a link. In 1817 the *Dresdner Anzeiger* reported that as the draisine replaced horses "it may be hoped that the price of oats will fall in the future". In 1818, the Comte de Ségur, an aristocratic scribbler for the *Journal de Paris*, wrote that he had walked a considerable distance in order "to see these peculiar carriages intended to abolish the luxury of horses and to lower the price of oats and hay."⁴

There are many claims to the first person to have invented the bicycle. However the first person to file a patent for a two wheeled device for which the rider had to balance themselves was Karl Von Drais from Germany. "The Baron Karl von Drais of Karlsruhe, a German agricultural engineer and inventor, and Master of the Woods and Forests of the Grand Duk"⁵ "On February, 17th, 1818 he was granted a five-year French patent through Louis-Joseph Dineur, a patent agent, of 47 Quai de l'Horloge, Paris, and in April he was ready to sell his invention to the world."⁶ Denis Johnson a coach maker from England found out about Drais's invention and designed his own version for which he filed a patent on June 21st, 1818.

The Hobby Horse, Velocipede or Draisine consisted of two wooden wheels with a steel tread attached to a frame constructed of wood. The rider sat on the seat and used his feet to propel himself forward like Fred Flintstone. The Hobby Horse borrows most of its components and parts from other means of transportation. For instance the seat comes from a horse's saddle and steering, which was used for the first time, is borrowed technology from ships tillers. "The resulting velocipede, or draisine, was the first vehicle to use the key principle of modern bicycle design: balance."⁷ "The draisine pioneered other features of today's bicycle. It had brass bushings — elementary bearings — in the wheels to cut friction, and its frame of well-seasoned ash weighed only 20 kilograms, making it as light as a modern bike."⁸

At first the bicycle was not considered to be a threat to displace the horse as the major means of transportation because of how inefficient it was. However as with all things new people are sceptical and reluctant to change and this was certainly true for the beginnings of the bicycle. "Opinions about bicycles have ranged from a Baltimore minister's 1896 ravings describing the bicycle as "a diabolical device of the demon of darkness... imbued with a wild and Satanic nature", to the claims of health-cultists in the 1800s that the bicycle was the cure-all for the human race."⁹ The arrival of this strange two wheeled contraption on city streets didn't coexist seamlessly with horses. "London quickly banned Johnson's hobby horses because cyclists traveled so quickly that they were disruptive and dangerous among the horse traffic of city streets."¹⁰ The first examples of the bicycle were not taken seriously and were considered to be a joke. "The English people, though, were soon calling this vehicle the hobby-horse, after the children's toy, or the even more pejorative, dandy-horse, after the foppish class of men

that tended to ride them."¹¹ Another fact that held back the initial development of the bicycle was the cost to purchase one. "At first, the bicycle was limited to the upper classes, as a new bicycle cost as much as a horse."¹²

Kirkpatrick Macmillan took Drais's design of the Hobby Horse and added pedals and cranks which enabled the rider to pedal forward, instead of pushing their feet on the ground.

Kirkpatrick Macmillan, a blacksmith from Scotland, developed a bicycle in 1839 with a decidedly modern look to it. In fact, his was arguably the first modern bicycle, since it is the first surviving two-wheeled machine that a rider could power without having to touch the ground. MacMillan combined three modern design elements: two smallish wheels with the rider seated between them, a back wheel driven by cranks and a front wheel that was used to steer the bicycle. Still, the drawbacks remained; these machines all bounced, rattled, broke and were hard to steer and stop. Without an efficient pedaling system, bad roads, steep hills and nasty weather put a real damper on the widespread acceptance of this blossoming form of transportation.¹³

However Kirkpatrick Macmillan's design did not catch on, and it wouldn't be until twenty years later that the bicycle would see any major developments. The Hobby Horse didn't disappear altogether from 1820 to 1860, despite the lack of any new innovations. In the 1860's Pierre Michaux from France took the bicycle to the next phase of its development and started manufacturing them in numbers.

Like many small manufacturers of metal and woodwork, by about 1860, Michaux had branched out to include velocipedes among the products he made and repaired. In 1861 someone in his shop — one of his sons or a worker named Pierre Lallement, depending on which version of the story you believe — hit upon the idea of attaching pedals to the front wheel of an old Draisienne brought in for repair. The idea was not new; two Germans, Philipp Fischer and Karl Kech, had also adapted Draisienes in this way. What was new, though, was what Michaux et Compagnie did with the idea. They built two experimental models, rode them, tinkered with them and rode them some more until they had what they believed was a marketable machine. They then began to make Velocipedes for sale, producing 142 machines in 1864 and more than 400 by 1865.¹⁴

To address the issue of bumpy roads in 1869, the Phantom bicycle company incorporated rubber to the tread off the existing iron wheels. This would be a big improvement from the harsh ride that had been experienced up this point. It would take another eighteen years or so for the next big breakthrough when John Dunlop patented his invention for the pneumatic tire.

A gigantic advance for the comfort of the rider was the invention of pneumatic tires. Originally patented in 1845 in England by R.W. Thompson, pneumatic tires were first applied to a bicycle in 1888. John Boyd Dunlop, practicing as a veterinary surgeon in Belfast, fitted a rubber hose to his son's tricycle, and filled this tire with compressed air. Dunlop patented the pneumatic tire on 23 July 1888 and began limited production. Two years later solid rubber bicycle tires had disappeared from use, and by 1892 Dunlop was a millionaire.¹⁵

Around the same time as Dunlop's pneumatic tire was gaining popularity major advances in the bicycles design were taking place, this would bring us to the modern era of the bicycle as we know it today.

In the 1890s, two main types of cycles were being produced, each with its die-hard adherents. The first and older vehicles were originally called bicycles. The front tire stood head-tall to a man, followed by a small rear tire. The seat was mounted chest-high, and required athletic ability and a certain air of derring-do to mount and dismount. These gained the nickname of penny-farthing, from the tire sizes' resemblance to the largest and smallest English copper coins of the time. The second type of vehicle vying for the allegiance of riders was a newer invention with two equal-sized *wheels*. As these new cycles grew in popularity, they eventually commandeered the name bicycle, and the penny-farthing became known as 'the Ordinary'. Races were often held between bicycles and Ordinaries and all accounts report that the competitions were fierce.¹⁶

All things considered it is quite apparent that the bicycle has evolved from the rudimentary design that Karl von Drais invented in 1818. In addition one cannot overlook the fact that there are many similarities in Drais's design and modern bicycles. There were many claims made as to who was the first person to invent the bicycle however, it was Karl von Drais who first filed for and received a patent. The Hobby Horse paved the way for one of the most efficient means of transportation ever developed.

Notes

¹ *Bicycle history magazine* <http://www.history-magazine.com/bicycles.html> Will and Terra Hangen October/November 2001 issue [June 2, 2009].

² Babaian, Sharon. "The most Benevolent machine" "A historical assessment of cycles in Canada" (1998 Ottawa Canada,) 5.

³ Hamer, Mick. *Brimstone and bicycles* *New Scientist*; (1/29/2005, Vol. 185 Issue 2484), 48-49.

⁴ *Brimstone and bicycles*

⁵ *King of the Road." An Illustrated History of Cycling" 18.*

⁶ Ritchie, Andrew. *King of the Road." An Illustrated History of Cycling" (1975) 18*

⁷ <http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=15932327&site=ehost-live> (May 26, 2009)

⁸ *Brimstone and bicycles*

⁹ *Bicycle history magazine*

¹⁰ *Bicycle history magazine*

¹¹ *The most Benevolent machine, 5.*

¹² *Bicycle history magazine*

¹³ *Bicycle history magazine*

¹⁴ *The most Benevolent machine, 9.*

¹⁵ *Bicycle history magazine*

¹⁶ *Bicycle history magazine*

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