

THE DARING FEATS OF A TRICK-RIDER.

The habitués of the Variété Battenberg, in Leipsic, recently had an opportunity of witnessing the astonishing feats of an American trick-rider, N. C. Kaufman, whose performances probably surpass anything which has yet been attempted in Europe.



Our German contemporary, Die Illustrierte Zeitung, remarks that Kaufman's tricks are so startling and often so daring that a description of them would fill a goodly sized volume. When Kaufman first appears upon the stage, he lays his wheel upon the floor. He then runs up to it, and in a flash, placing both feet upon the pedals, swings himself into the saddle. Then a series of remarkable tricks rapidly succeed one another. He stands upon the step and drives the bicycle with his hands. He seats himself in the frame and, guiding the wheel with one hand and turning the pedal-crank with the other, rides at full speed about the stage. Then, unwinding himself from his uncomfortable position, he swings himself into the saddle again, and, raising the front wheel at the same time, turning the handle bars completely around, pedals about supported only by the rear wheel.

While riding in this way he performs all conceivable acrobatic feats. One of our illustrations, for example, shows him standing upon his head—a feat which requires the utmost firmness and coolness. He confines himself not to the safety alone, but also performs his tricks on the old-fashioned "ordinary," exhibiting many new feats in addition to the conventional tricks of most trick-riders. In spite of the many break-neck experiments which he has made, he has never been seriously injured, although accidents have occurred. Kaufman was born in Rochester, and first came into notice at a race given by the Rochester Bicycle Club. At the present time he is probably the best-known of all trick-riders.

THE HISTORY OF THE BICYCLE.

The history of the bicycle has been written so many times that it is undoubtedly an old story to many of our readers, still, for the sake of those who may not be familiar with it, we give the following brief outline. The now historic types in the evolution of the modern bicycle are so well known that we have refrained from reproducing illustrations of them.

The germ of the modern bicycle is found in the "hobby-horse" which was popular at the beginning of the present century. In brief, it consisted of two wheels connected by a rigid frame of wood; the rider sat on a saddle midway between the wheels and propelled it by means of strides on the ground. No provision for steering was made, so that its motion was limited to a straight line. In 1818 Baron Von Drais arranged this cumbersome machine so that the front wheel could be steered. That such a clumsy means of locomotion should soon fall into disuse was not at all strange. We have now had two wheels arranged in tandem, then the steering head was invented which permitted one of the wheels to turn, and finally the third step consisted in contriving a mechanism by which the affair could be propelled without touching the feet to the ground. Such a machine is credited to two Scotchmen, Gavan Dalzell and a man of the name of MacMillan. It was usually supposed that Dalzell's invention dated from 1834, but in 1892 a close examination of the matter resulted in the downfall of the legend, and even the original blacksmith's bill was found, which proved that it was made in 1847. In Dalzell's device there were no true pedals in the ordinary sense of the word, the feet describing only a small segment of a circle. The motion was transmitted to a crank attached to the axle of the rear wheel by a lever.

It was to Ernest Michaux, a young Frenchman, that we are indebted for the fourth great step in the development of the bicycle. In 1855, while repairing one of the old machines invented by Baron Von Drais, he conceived the idea of applying cranks directly to the front wheel. The Michaux bicycle, or "velocipede," as it was called, soon attained great popularity, and the early types of this machine, or "bone shaker," have undoubtedly been ridden by some of our readers. Bicycle academies were established and races were run, and the machines even penetrated the far East. In 1869 a Parisian, M. Magee, still further improved the velocipede by making it entirely of iron and steel. And in the

same year rubber tires were introduced. In 1869 M. Michaux conceived the idea of making the front or drive wheel larger than the rear wheel, and brakes were also introduced. The result of the constant improvement was the old so-called "ordinary" or "spider" wheel, which remained very popular for the next fifteen years. The new wheel weighed from 35 to 50 pounds, instead of 80 to 100 pounds of the old velocipede. There were many dangers connected with the high wheel, however, and various expedients were adopted to avoid the danger of falls, such as placing the small wheel in front and propelling the machine by levers, straps, and ratchets. In 1880 Starley introduced what was called the "Rover," which was the true prototype of the modern safety. The wheels were both low, the larger one being in front. The rear wheel was driven by chains and sprockets, the same as in the wheel of to-day. Little by little, changes occurred in the frame and great improvements were made in construction. Complex shapes which were once thought impossible to produce are now forged and brazed together. The strength of materials used in bicycles has been studied with great care, and the result has been that it is entirely possible to make a thoroughly satisfactory wheel which will weigh 22 pounds. At first manufacturers built the frames on dissimilar lines. Every manufacturer had a model of his own. Soon the frames of the wheels began to have a general resemblance, and at last the almost straight line pentagonal diamond was adopted. Gradually the top bar of this frame was raised, until to-day it is parallel with the ground. In its frame the bicycle is a veritable mechanical and engineering achievement. The bearings received more and more attention, until now a wheel will travel thousands of miles without showing any appreciable wear to them. In the old velocipedes the frame was rigid; then springs were introduced, the cushion tire followed, and finally the pneumatic tire was resurrected from the old patent records, thus furnishing the ideal spring between the rider and the ground, minimizing the jar due to inequalities of the road and giving a maximum of ease and comfort to the rider. By such steps was the simple diamond frame

wheel evolved from a construction which was almost a mechanical impossibility. The mechanical difficulties connected with the tricycle are less than those connected with the bicycle, but tricycles have never been particularly popular, even when built on the lines of the modern bicycle. Perhaps the greatest field for the tricycle is where it is propelled by a motor, and in the present issue we illustrate the leading French motor tricycle.

There have been a number of special forms of bicycles on the market, of which the chainless wheel is perhaps the most interesting and important. The chainless bicycle does away with the dust and friction of the chain, the shaft being substituted. Many riders claim that the chainless wheel runs steadier than the chain-driven wheel. Various devices, some of them highly successful, have been used instead of bevel gears. Most manufacturers of chainless bicycles still continue the manufacture of chain-driven wheels. The tandem is also one of the best examples of the special form of bicycle, and, strange to say, it goes back to 1869, when the device was invented which made it possible for two people to ride on a velocipede, the back saddle being intended to be used either as a side saddle for a woman or as a man's saddle. The advantages connected with a tandem are many. Geared up to high speed, a tandem runs with great ease, and the two riders are able to carry on conversation. The absence of vibration and the power which the tandem has against a head wind have all conduced to make it popular. Gradually came the demand for higher and higher speed for pacing and racing purposes; so we now have six or even seven riders mounted on a single pair of wheels. The sextuplet wheel really represents a remarkable engineering achievement, as the truss which is formed may have to support a thousand pounds. Such a wheel is



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