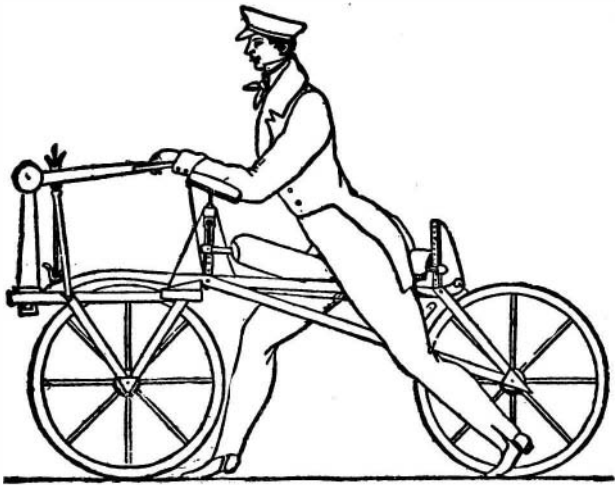


**THE BICYCLE INDUSTRY.**  
BY BEN BOLDER.

The history of the bicycle is rich in all that pertains to crudeness, novelty, and the subsequent rapid development of lines which were the foundation of the



THE "DRAISINE" OF 1816.

modern bicycle of to-day. Since 1816 the inventive genius of man has been at work upon the construction of cycles; but not until 1869, when the American velocipede appeared, can it be said that cycle manufac-



THE VICTOR "FLYER" OF 1893.

turing took even the slightest form as an industry. The bicycle of to-day is a radically different affair from that of five or six years ago. Within this period the safety bicycle has superseded the dangerous high wheel;

cushion tires have succeeded solid ones, and these in turn have been placed among other back numbers by the more modern pneumatic tire. The highest grade bicycles of 1893, such as the world-famed Victor bicycles, have probably reached that stage of development where many more improvements are improbable, if not impossible. The maximum and minimum in weight have been reached, and it is now assured that from 28 to 35 pounds is the proper standard, varying from the former for a racing wheel to the latter for rough usage and very heavy riders. Above or below these weights is undesirable.

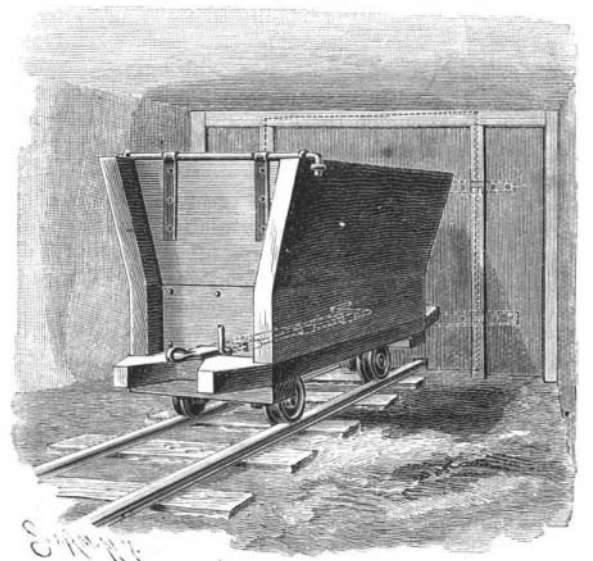
Again, art in the manufacture of the bicycle has lightened and beautified the material and lines of design, compensating for weight by a better understanding and application of mechanics, until to-day pleasure, touring, or business trips are equally indulged in by all. The bicycle is coming to be as indispensable as the carriage, simply because the art of bicycle manufacture has made it possible to obtain from the bicycle for business or pleasure that which is impossible from the carriage. Of course there is still much crudeness and imperfection in many bicycles. By far too great a majority are cheap, both in quality and price, and it is even stated that there is but one factory in the world where every part of the bicycle is made complete from A to Z; that is the factory, or rather factories, for there are three of them, being those of Overman Wheel Company, located at Chicopee Falls, Mass., where the Victor bicycles are built complete, without outside assistance. The tires are Victor tires, not those of some part maker; the saddles are Victor saddles, rims Victor rims, and so on. The vast structures devoted to the manufacture of Victor bicycles were all built expressly for the purpose, with the intention of turning out the best and highest grade bicycles in the world at the highest prices.

That the Overman Wheel Company has succeeded goes without saying, and its magnificent plant, complete in every detail, is an object lesson to other makers who desire to reach the summit of fame. The Victor being the first safety bicycle built in America, its makers have always been a little in advance in improved construction. The Victor "Flyer" here illustrated is considered the highest development ever attained. Its contrast to the crude wheel of 1816 is most marked and startling. The Overman Wheel Company has issued

an elegantly embossed and printed catalogue for 1893, covering every feature of the Victor product. It is a triumph of the printer's art, and probably the finest catalogue ever devoted to the subject.

**AN IMPROVED MINE CAR.**

The illustration represents a mine car of simple and durable construction, which has been patented by Mr. Homer Durand, of Starkville, Col. The bottom of the car body extends beyond its ends, and the central portion of the extension is cut away, forming side projections adapted to abut against the door in the mine shaft as the car travels down the track, the car thus automatically opening the door in the shaft. At one

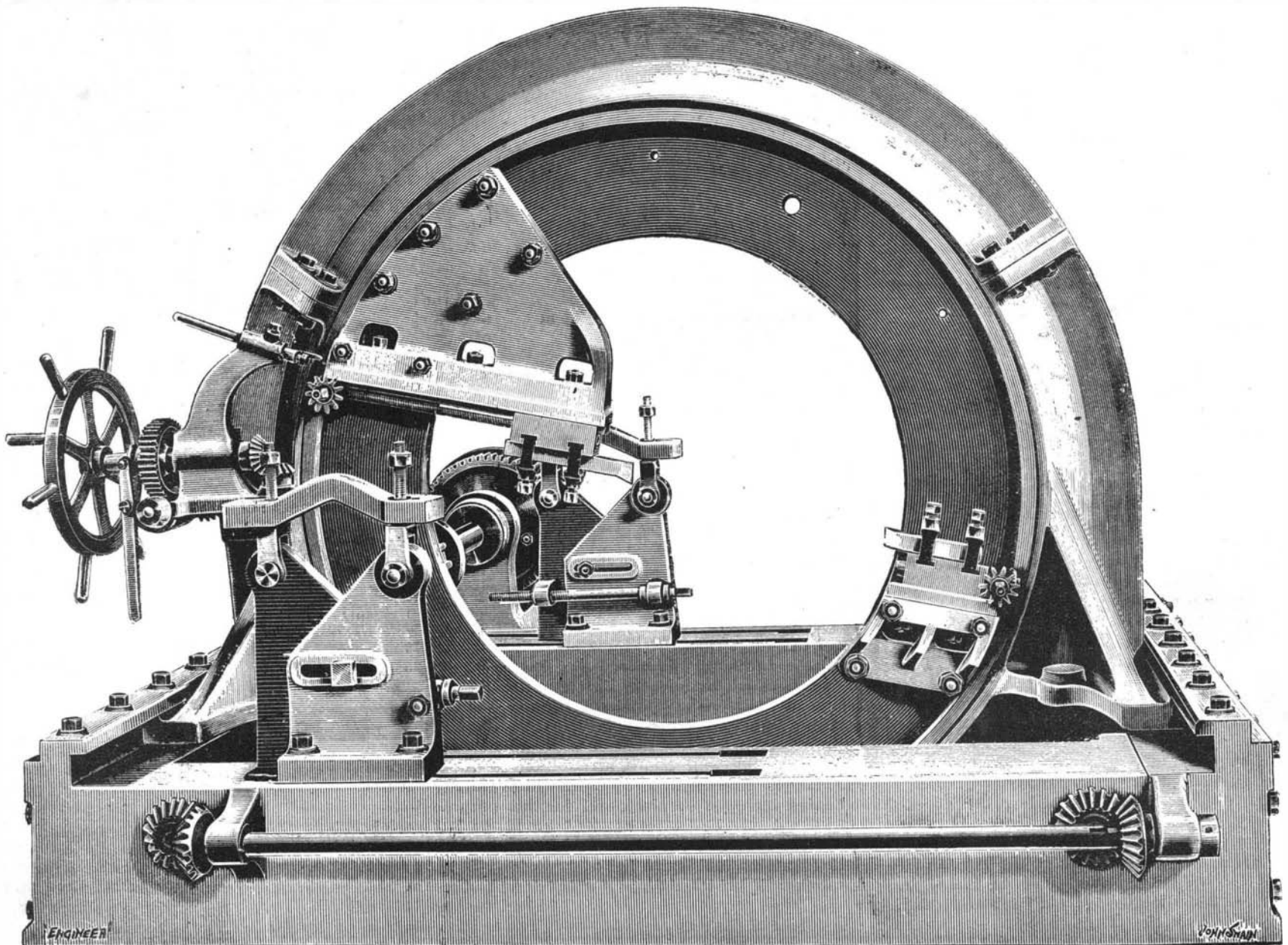


DURAND'S MINE CAR.

end of the car body a door is hung upon a transverse rod, and the door is prevented from swinging outward by a projection on one end of a longitudinal rod turning in suitable bearings, the rod at its other end having a crank arm or handle. When this handle is swung upward the door swings outward to discharge the contents of the car, but when the handle is turned downward the door is locked in closed position.

**CRANK SHAPING MACHINE.**

The illustration, which is from the *Engineer*, London, represents a crank pin turning machine specially adapted for turning double or single sweep crank necks. As will be seen by the engraving, the machine



IMPROVED CRANK PIN TURNING MACHINE.