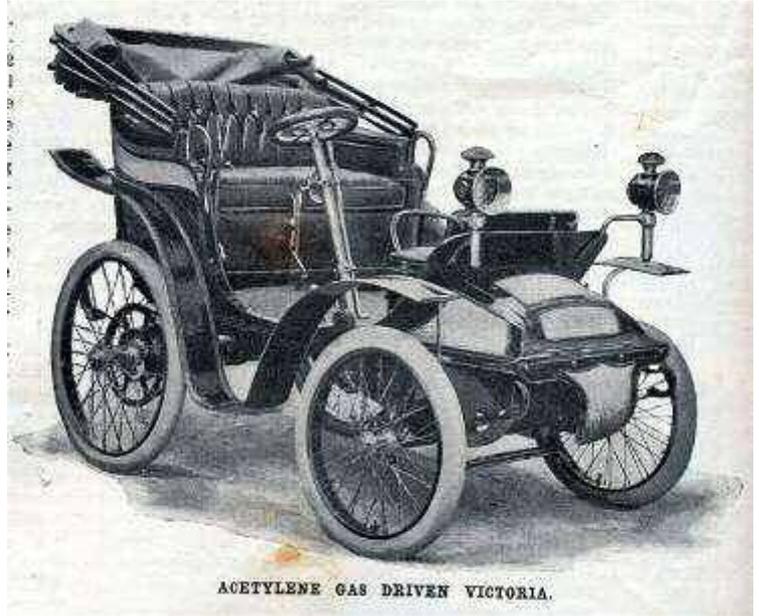


ACETYLENE MOTOR WAGONS AND CARRIAGES

Taken from the Scientific American Magazine, November 11, 1899.

Our engravings (pictures) give an idea of the running gear of a standard truck for delivery wagons, etc., and of a Victoria, both being operated by acetylene gas and made by the Auto-Acetylene Company, of 15 Park Row, New York city.

The standard truck for delivery wagons and other heavy vehicles, shown in our second engraving, weighs 1,000 pounds as it stands. The motor consists of a duplex engine having four cylinders and two exploding chambers. It is capable of running without a fly-wheel, and the normal speed of the engine is 1,000 revolutions per minute which, when connected with the driving mechanism, propels the vehicle at a rate of 12 miles an hour, which is sufficient for all business purposes. The intermediate gearing permits the reduction of the speed to 1 3/4 miles per hour.



The engine itself is not reversible, but back-gearing is provided and can be thrown into operation by a foot shift and the wagon backed at a speed of 1 3/4 miles per hour. The speed forward can be graduated from the minimum to the maximum with the greatest ease. No water jacket is necessary with this motor, nor is any other means for cooling the engine necessary. With a special apparatus arranged for speed on a test of nine hours, the motor ran at the rate of 35 miles per hour with none of the parts of the engine heating abnormally. A vehicle similar to the one represented in the engraving has travelled 6,390 miles with but one accident or stoppage due to any defective part of the machinery.

The engine employed is designed specially for the use of acetylene gas; 1,500 cubic inches of carbide will drive the truck, which is of 10 horse power, 70 miles at a speed of 12 miles per hour. There is a valve provided which permits of changing from acetylene gas to gasoline and from gasoline to kerosene oil, so that while the engine is operated most economically and satisfactorily with acetylene, at the same time other fuels can be used in an emergency, if supplies of carbide are not readily obtained.

The same company has recently made three miner's prospecting wagons which possess many features of interest. The wagon is constructed so as to possess strength, and all machinery is carefully shielded, so that underbrush, etc., will not interfere in any way with its operation. The idea in these prospecting wagons is to provide a miniature mining camp complete which can be transported at the rate of 2% to 4 miles an hour. A small ore crusher is mounted upon the truck, so that it can be connected directly with the motor, and an assay furnace is also provided to test the gold bearing ore as it may be found. The seat in front can be turned down to provide a bunk for two persons, and while one man drives the wagon his companion can busy himself making assays of the findings. Ample food supplies can be carried, and with one of these wagons a trip of two or three weeks can be made by prospectors.

The other engraving (next page) represents a comfortable Victoria for two or three people and has one auxiliary seat which can be used if desired. The engine is mounted on the forward truck. The total weight of the carriage is only 750 pounds. The explosion of the hydrocarbon mixture is between the pistons moving in opposite directions. The vibration is neutralized, and no shock is imparted to the vehicle. At all speeds it is practically noiseless, making no more sound than a well-constructed electric vehicle.

The pleasure carriages are provided with duplex speeds that give all the speeds that can be obtained with a truck, as we have already seen, and this can be multiplied by two, three, or four, which means that a vehicle can be operated from 1 3/4 miles to 48 miles per hour. As the carriage is provided with an 8 horse power motor, this seemingly phenomenal speed will be understood. The motor operates directly in proportion to the power required. The cycle calculation is so determined that the fuel consumed is in direct ratio to the power exerted. What has already been said concerning the carbide and gasoline for the truck applies equally well to the Victoria.

The steering is done by means of a wheel or a lever. Either device may be used at will, the wheel being the best for long journeys and the lever for short ones.

The steering gear is cushioned upon a telescoping hub. In the carriage shown in the engraving the wheels are of bicycle construction, with wire spokes, steel rim, and rubber tires, but in future carriages with wooden wheels with solid tires will be substituted, for most of the trouble with motor carriages comes from the pneumatic tire, and sooner or later motor carriage manufacturers will come to this view of the matter.



RUNNING GEAR OF ACETYLENE GAS DRIVEN TRUCK