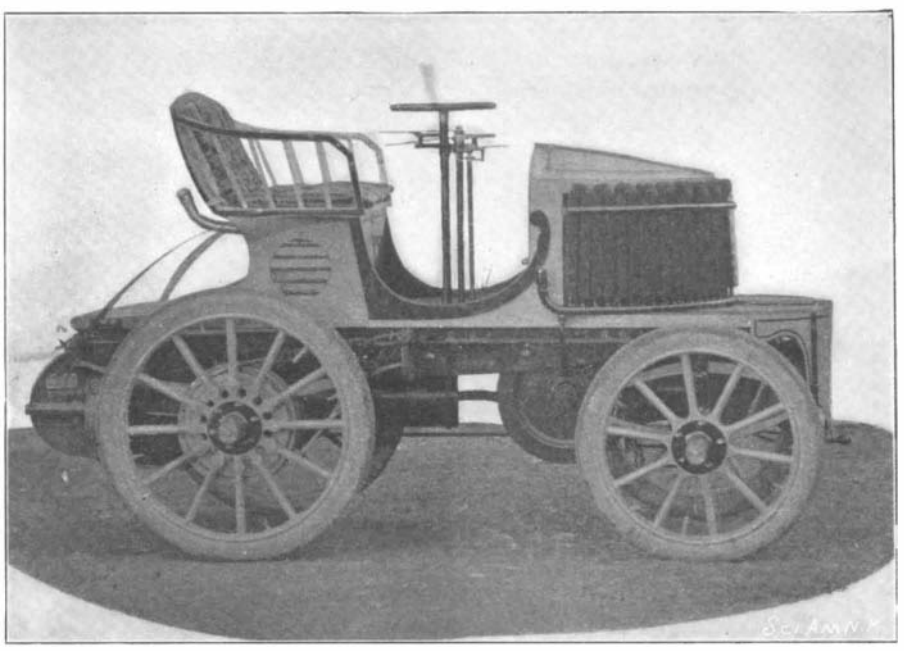
DE DIETRICH AUTOMOBILES.

AMEDEE BOLLÉE (FILS) SYSTEM.

The type of automobile exhibited by the De Dietrich Company is shown in the illustrations and diagrams. The truck rests upon the axles by long and elastic springs; as it carries all the organs of the motor and the transmission, any form of carriage body may be used. Two of the principal types are shown in the engravings, one of these being a racing machine. In front of the truck is placed the motor which is supported by a cross-tube and a T-iron. The starting of the motor is effected by the handle, whose shaft carries at the other end a bevel gear, which engages with a similar gear on the motor shaft. The movement of the motor is transmitted to the rear by the belt, *J*. The speed-changing mechanism, shown in Fig. 2, is placed in the rear of the truck, and includes four speeds and reversal. The two main pulleys, *P P'*, mounted on the intermediate shaft, *A*, carry the belt from the motor; the pulley, *P*, is fixed, while *P'* is loose on the shaft. The fork, *F*, displaces the belt to the fixed pulley and starts the system, the fork being controlled by a handle within reach of the conductor and a series of levers. The shaft, *A*, is mounted in two bearings. The gears, 1, 2, 3, 4, for the different speeds are mounted on a collar which turns with the shaft, but is keyed to it and may be displaced to one side or the other, throwing the different gears into connection with the gears, 1', 2', 3', 4', on the shaft of the differential. The gears are displaced by a lever, *L*, which engages in a collar, *r*. In the figure showing the speed-changing device the wheels, 4 and 4', are engaged, this giving the maximum speed; by pushing the lever the wheels, 3, 3', are engaged and so on to 1 1' which gives the slowest speed. The rear movement is obtained by the small pinion, *p*, mounted on a shaft carried at the end of a lever, *V;* the pinions, 1 1', are placed near together, but without touching, and the lever then moves the small pinion into contact with each of the gears, transmitting the movement in the inverse direction. The differential, *D* (Fig. 2), is of the usual type; it carries a drum, *O*, upon which a braking action is obtained by a steel band. The pinions, *M* and *N*, are mounted at each end of the shaft and turn in oil, transmitting their movement by two bevel gears to two lateral shafts upon whose extremities are carried the small pinions in the side elevation, which engage with the gears upon the driving wheels. The motor, Fig. 3, is horizontal, and has two cylinders cast with their water envelopes. The ignition is made by incandescent tubes. The normal speed of the motor is 650 revolutions. The 6½ horse power size weighs 330 pounds, and the 10 horse power, 400 pounds. The cooling of the cylinders is obtained by water contained in a special tank where it remains cold until entirely exhausted; it is brought to the cylinders by a tube of small diameter without any mechanical device, thus suppressing the circulation pump. The steam from the cooling chamber of the motor passes into a condenser formed of tubes, placed generally in front of the vehicle; the steam is condensed in whole or part and the water returns to the cylinder jackets by a tube passing below the motor. For a motor of 9 horse power, 12 or 14 yards of cooling tube placed in front of the vehicle allow a whole day's run without renewing the water. The motor is provided with a centrifugal governor which acts upon the exhaust valves. The carbureter is shown in Fig. 4. The reservoir, *R*, carries the cylindrical float, *F;* the gasoline arrives by the tube *r*, and a constant level is obtained in the reservoir by the conical plug, *c*, which stops the orifice at a certain level. The tube, *T*, below, communicates with the second part, containing two cylindrical chambers. The lower chamber admits air by the opening, *A*, and in the upper is the aspiration orifice, *D*, of the cylinders. In the center is a circular plate, pierced with holes carried upon the rod, *V*, whose lower part enters into the conical orifice, *t*, of the gasoline tube. Owing to the aspirating effect of the piston, the gasoline comes out in jets and strikes the plate, producing an atomizing effect, and the air arriving by the orifice, *A*, is thus carbureted, and passes into the upper cylinder and thence to the motor. The gasoline supply is regulated by a screw above, which limits the course of the vertical rod; the screw is operated by a lever within reach of the conductor. The steering of the vehicle is effected by a hand-wheel whose movement is transmitted to the front wheels by a system of levers. The conductor has also at hand the brake lever, the speed-changing device for the pinions, the lever for regulating the carburetion, and a lever which acts upon the governor spring and thus changes the speed of the motor. A second brake is provided, which acts upon a collar on the main driving gears.



DE DIETRICH RACING MACHINE.

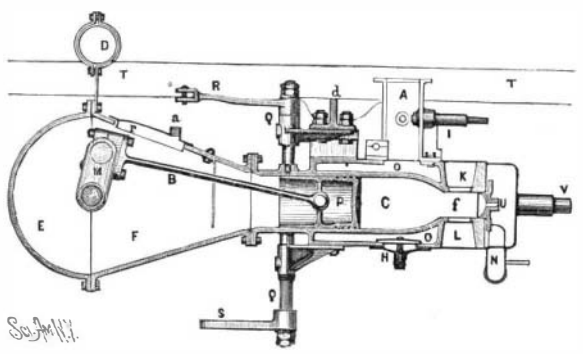


Fig. 3.—THE DE DIETRICH MOTOR.

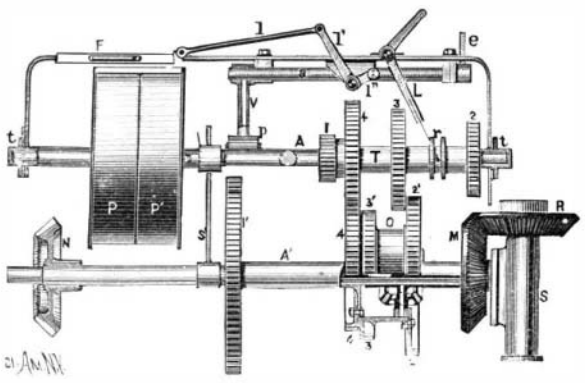


Fig. 2.—THE SPEED-CHANGING GEAR.

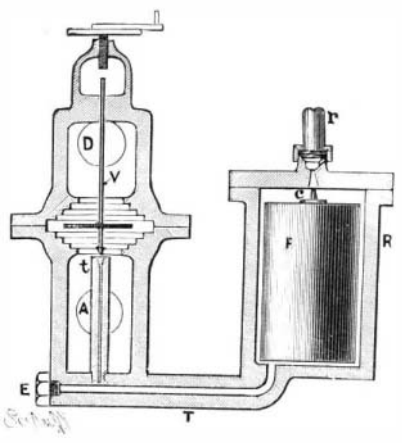


Fig. 4.—THE DE DIETRICH CARBURETER.

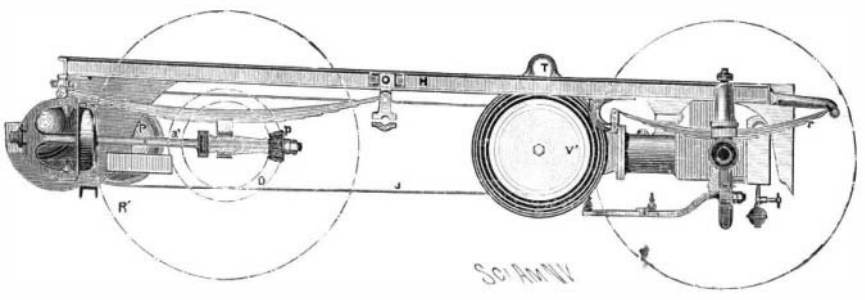
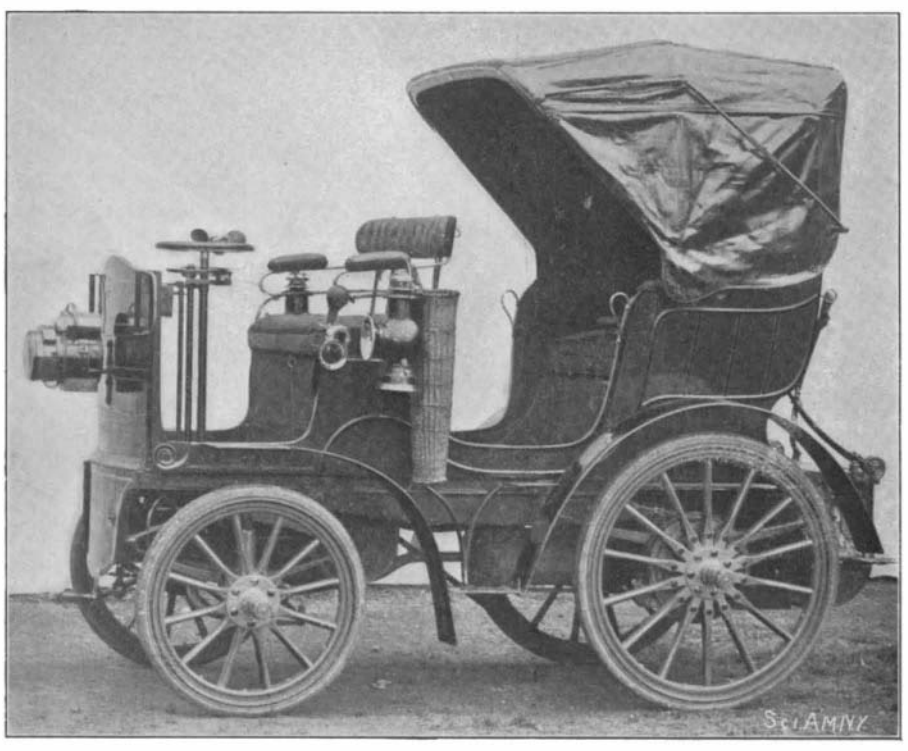


Fig. 1.—SIDE ELEVATION OF THE CARRIAGE FRAME.

DE DIETRICH MOTOR CARRIAGE.



DE DIETRICH MOTOR CARRIAGE WITH TOP UP.

Rafia fiber is a staple article of commerce in Madagascar. The Hovas use the under part of the leaf, split very fine, as a warp with a weft of white silk producing an article called silklamba, which is sold both in Europe and America. The coast tribes use it for clothing, but of coarse quality, with dyed stripes of indigo, saffron, black, and a dirty green. It is a cold, comfortless-looking material and does not lend itself to graceful folds, and when two natives come down a road clad in new rafia shirts the noise produced is somewhat similar to that of two wire meat covers rubbing together.