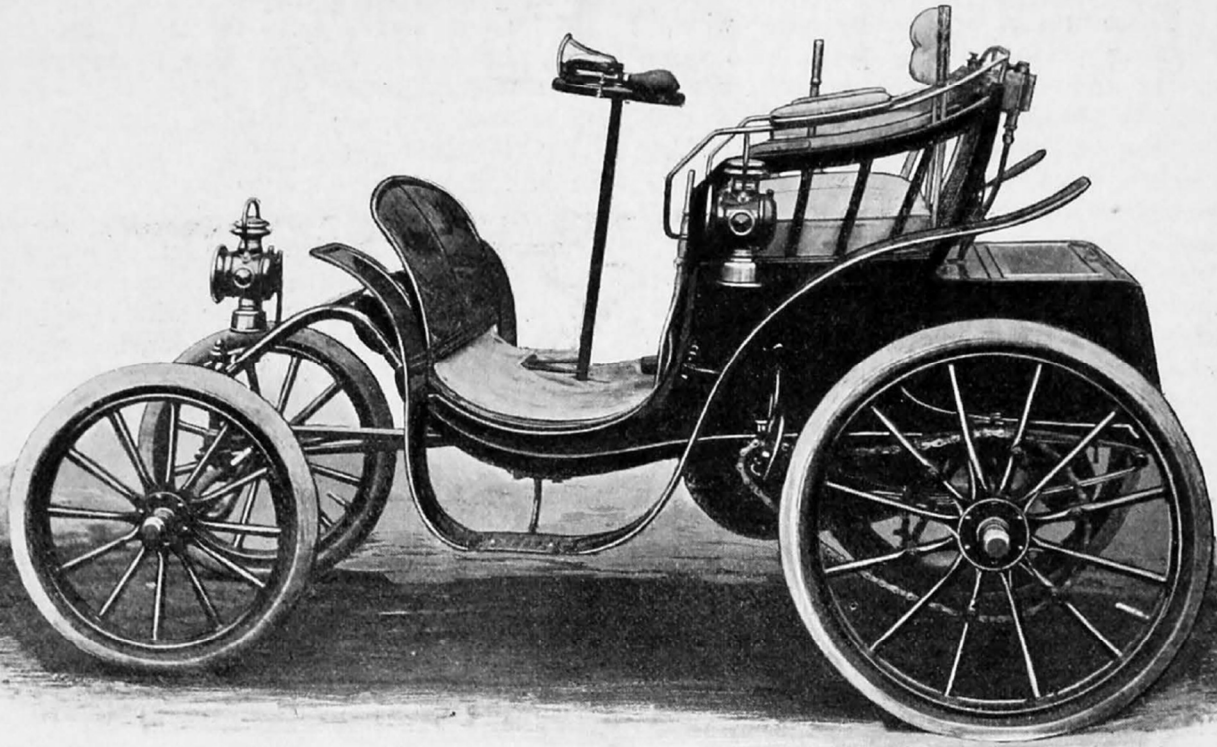


*THE LIGHT PANHARD CAR.*

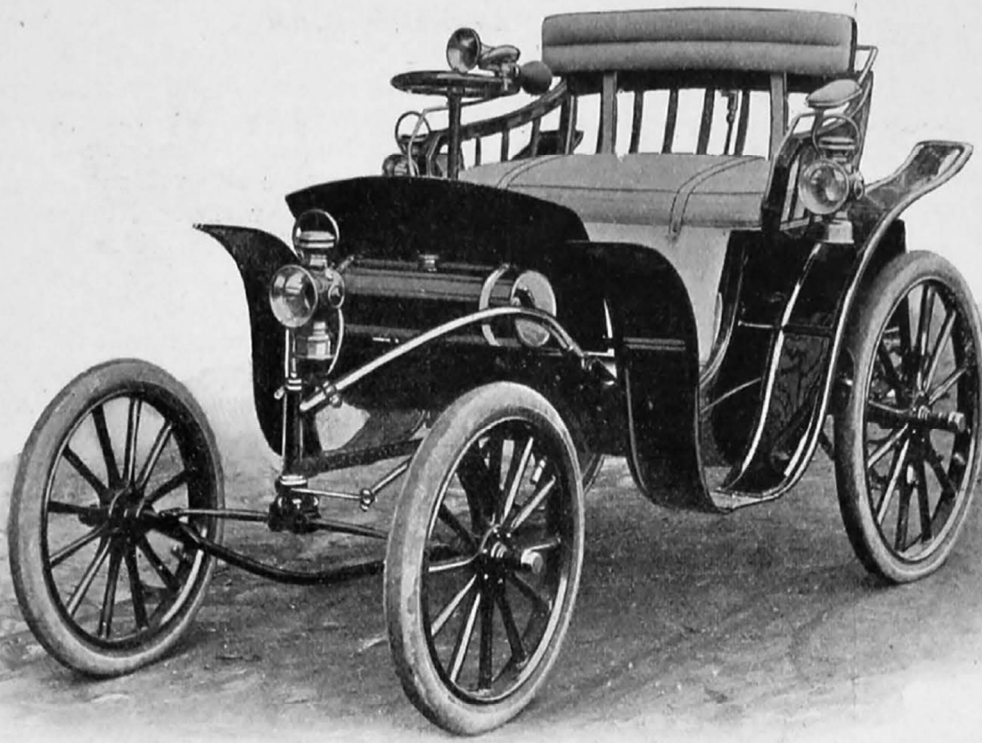


The big autocar firms who turn out driving mechanisms of standard powers have so much business in hand that they do not find it worth their while to cater for customers desiring a lighter and cheaper form of vehicle, because, in many cases, this would necessitate an entire modification in the design of the motor and propelling gear, and so long as makers can book as many orders for the ordinary cars as they can execute, they are not disposed to go to the trouble and cost of further experimental work. A noteworthy exception to this rule, however, is the Société des Anciens Etablissements Panhard et Levassor, who, on receiving numerous enquiries from their customers for a cheaper car than they were then manufacturing, immediately set to work to devise one. As the cost of the car lies principally in the motor it was obvious that the engine must be of simpler and cheaper construction than the Daimler, and the firm decided to employ a motor specially devised for a light carriage by one of the directors, Commandant Krebs. In designing this engine the inventor had naturally to aim not only at simplicity but also at economy of weight and space, and as in a light vehicle there is not much resistance to the vibration of a motor, the mechanism had to be so arranged that the vibration would be taken up with the least inconvenience to the passengers.

In the motor of Commandant Krebs all this has been accomplished with remarkable success. He has adopted a single cylinder, inclined at a few degrees from the horizontal, and situated behind the countershaft at the rear, where it is very accessible, and well open to the cooling influence of the air, which circulates through the movable perforated plates forming the back of the car. The motor is fired by incandescence. It develops four horse-power, and the body of the cylinder is cooled by flanges, but as air is not a sufficiently good conductive medium for an engine of this power, the combustion chamber has had to be

cast with a water jacket. The advantage of this arrangement lies in the very small amount of water used. The ailettes or flanges radiate the heat from the body of the cylinder, and, to a much smaller extent also, the heat developed by the explosions, and as there is very little heat to be conducted by the water, only a small quantity need be carried. Again, as the water circulates by difference in temperature there is no necessity for a feed pump, so that one of the little sources of annoyance in the autocar is done away with. The engine operates on the countershaft by means of spur wheel gearing, which is arranged for three speeds with a maximum of thirty kilometres, and it also has a reversing gear, as well as two brakes, one operated by the hand and the other by the foot, so that the vehicle fully complies with the requirements of the new law. The brake and starting levers are both at the side, and very handily placed. The car is steered by a wheel, and is very sensitive and accurate in operation, and one of the advantages of the new system of steering is that the front wheels are absolutely rigid, and cannot be deflected by stones or other obstacles.

Weighing 350 kilos. in running order, the carriage has roomy seats for two persons, and except for the steering wheel there is absolutely no mechanism in the way of the passengers. The splashboard is sufficiently high and wide to afford plenty of protection, and it carries in front the petrol tank. The underframe extends forwards in a series of four tubes, two of them horizontal and the two others bent in a manner to give the greatest support to the front part of the car, and all of them converge to the spindle on the fore axle. In the first cars constructed this arrangement gave a very long wheelbase, and the length of the tubes appeared, indeed, to be a source of weakness, but in the new vehicles the base has been shortened, though it is still sufficient to give plenty of stability



to the car without sacrificing its strength. As with everything turned out of the Avenue d'Ivry Works, the carriage gives evidence of the greatest care in construction, and it is built with as much attention to the smallest details as the vehicles costing four times

the amount. We are able to say from experience that the vibration is practically imperceptible, and there is no more noise than in the most perfect types of the bigger cars, while as to facility of handling and management, the new light vehicle is all that can be desired.