

The Motosacoche.

Messrs. Herbert H. Smith have supplied us with the following extract from the *Motor Cycle*, of May 21st, 1906:—

It is a matter of regret that the competition for light-weight motor bicycles held by the Allgemeine Motor-fahrer-Verband over a course of 178 kilometers in the Vienna and Semmering district on the 6th inst., was attended with such bad weather. The conditions were most unfavourable, as the rain fell in torrents, and turned the streets into a veritable quagmire, which proved a serious obstacle not only for the light-weight machines, but also for heavy ones, and even for autocars. Of the eleven motor cyclists who started, only two managed to complete the course. In the competition were three $1\frac{1}{2}$ h.p. Austria, three $1\frac{1}{2}$ h.p. Motosacoche, two $1\frac{1}{2}$ h.p. Schiebert, and three $1\frac{1}{2}$ h.p. Bree motor bicycles.

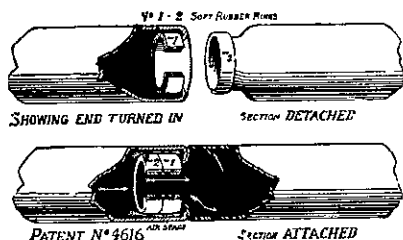
The winner was Heinrich Drager, on a Motosacoche, in 8 h. 15 m., representing an average of just over thirteen miles per hour. Baumgartner, on a $1\frac{1}{2}$ h.p. Bree, finished second in 9 h. 17 min. The result, considering the unfavourable weather, is very good. The bicycles complete, with the motor and fittings, weighed from seventy-seven pounds upwards, and the winner carried a twelve-stone rider over the 109 miles of heavy roads at a rate exceeding thirteen miles per hour, including the climb of the Semmering hill, which in Austria is considered a score for the light-weight motor bicycle.

Mr. Henry Sturme, the well-known English motorist and authority on cars, recently wrote to *The Motor*, London, as follows:—

Admitting the pleasure of riding in a six or eight cylinder car, it must also be admitted that a great deal of comfort and smoothness of running will be found in a good single-cylinder vehicle, properly equipped in the way of fly-wheel. Last week I had a friend staying with me for a few days who brought his single-cylinder Cadillac with him, and I had a very pleasant run on it. Except for a few seconds at starting, or when the spark was left advanced a little too long on a stiff grade, the throbbing of the engine was barely noticeable, so that under general conditions of driving, the car ran as smoothly and as steadily as all but the most fastidious could desire, and when the remarkable difference in complication and number of parts is taken into consideration, I really do not think that, for the use of the "average man," there is much in favour of the single-cylinder. I took my friend for this run over a fairly undulating country, and it was really remarkable the way in which the little car took quite considerable grades "on her top," so that we only got on the low gear—there were only two speeds—three or four times in a 20 miles run, which, after all, is not very much to grumble at.

Rich's Detachable Air Tubes for Motor Cycles and Tricars.

This handy device, which we illustrate through the courtesy of Messrs. Dunhill, London, has a patent joint and can be entirely removed without



taking out the wheel, which is a great convenience when making roadside repairs, or when fitting a spare tube. Unlike those of other detachable tubes, the joint is said to afford free circulation of air.

Dunhill's Duplex Lens Lamp.

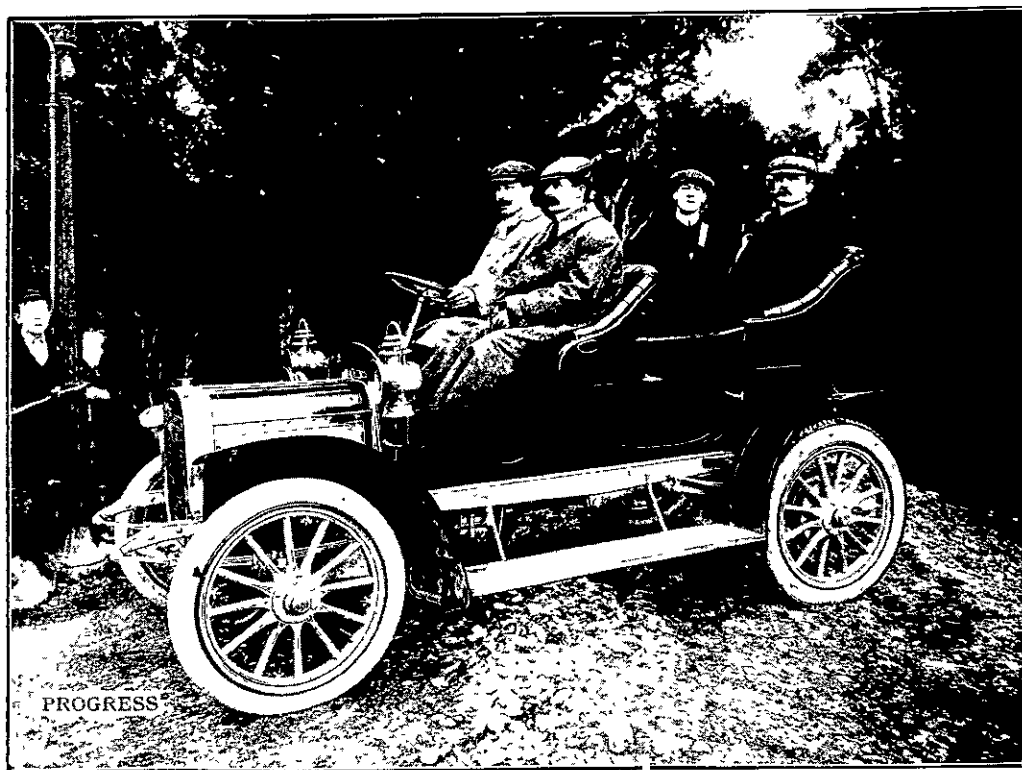
The accompanying illustration shows the lamp that has become generally popular with English motorists. It has a self-contained generator and is of 1,500 c.p. Both lens and parabolic reflector are fitted, and the single burner gives light for five hours with one charge. Its particular use is directed to side lighting for large cars.

THE STEAM TURBINE.

BY THE HON. C. A. PARSONS, C.B., F.R.S.

THE introduction of the turbine commenced in 1884 with a 10 horse-power turbine and dynamo. The system adopted in 1884 was that of causing the steam to pass through a large number of turbines in series suitably proportioned, so as to utilise the expansion of the steam which flowed at a comparatively moderate velocity because of its circuitous course through the many turbines of the

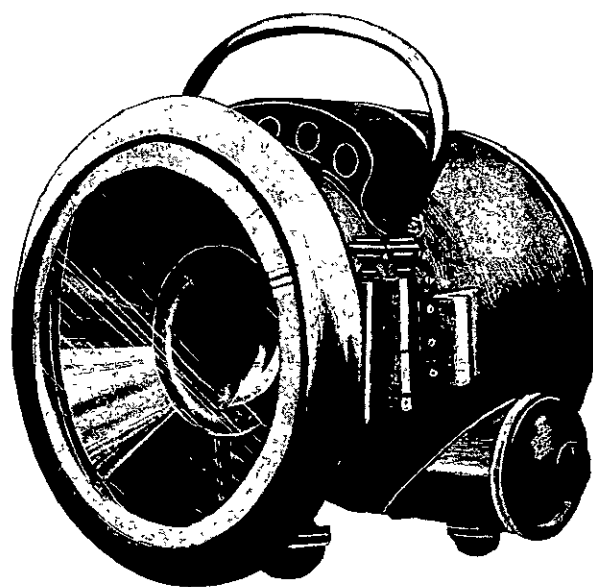
patent rights were reacquired, this permitting of reversion to the original and parallel type, and subsequent experience has shown that had the 1888 design been constructed in its entirety in 1892 an economy would at that date have been obtained about 25 per cent. superior to that actually realised. There is now no question that the turbine in its present perfected and economical form would in that case have come into general use about five years earlier, both for land and marine work. A simple explanation might be asked for as to why the turbine should be more economical than the reciprocating engine. The answer is that the turbine is able to expand the steam fully and economically from the boiler pressure right down



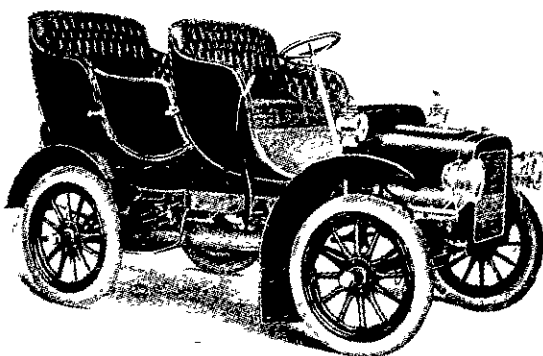
THE LATEST 10-12 H.P. ARGYLL, SHOWING THE CAR AT THE ENTRANCE TO BELLEVUE GARDENS AFTER ITS FIRST RUN IN NEW ZEALAND.

series, just as is the case with water flowing through a long course of rapids from the lake of high level to one of lower level, the lake of high level corresponding to the boiler, and the one of lower level to the condenser. In the initial stages the course of procedure commenced with the construction of a few turbine engines of small size, these were carefully tested and sent out to work and closely watched by competent men. Defects were promptly remedied and improvements discovered which were adopted in new designs and resulted in gradual accumulation of experience and trade knowledge. In the first year three engines were set to work, in the next year ten, and so on, until at the end of the fifth year, three hundred and fifty had been put into successful operation, all of the non-condensing type aggregating four thousand horse power. In 1888 working plans were prepared for a turbine of the condensing type which presented hopes of realising unprecedented economy in the use of steam for motive power and a great step in the development of the turbine. It was not till 1891, however, that facilities were available for its construction, and the anticipations were at length fulfilled when in the following year a hundred unit condensing turbo-generator was found to consume only twenty-seven pounds of steam per kilowatt hour, thus equalling the performance of the best triple-expansion engine of that date in the driving of dynamos. The turbine which achieved this result differed materially from that designed in 1888 because of the temporary loss of patent rights under which the work had been carried on up to this period. In 1893 the

to the condenser pressure while the reciprocating engine is unable to expand it the whole way, as a matter of fact it can only expand it usefully for about two thirds of the way. This is the chief difference, the other differences nearly compensate each other, for instance, the turbine has more waste from leakage, while in the piston engine there is a large waste from condensation and re-evaporation which does not occur in the turbine. Then again the turbine has fluid friction from steam and water and very little mechanical friction, while the reciprocating engine has much more mechanical friction and very little fluid friction.



DUNHILL'S DUPLEX LENS LAMP.
DIAMETER, 8½ IN WEIGHT, 6½ LB.



CADILLAC 10-12 H.P. TOURING CAR.

The *Overland Monthly*, published in San Francisco, has an illustration in its July issue depicting the San Francisco branch of the New Zealand Insurance Company, taken immediately after the earthquake. Under the picture it is stated that this was the first insurance company to start up on their old location in California street.