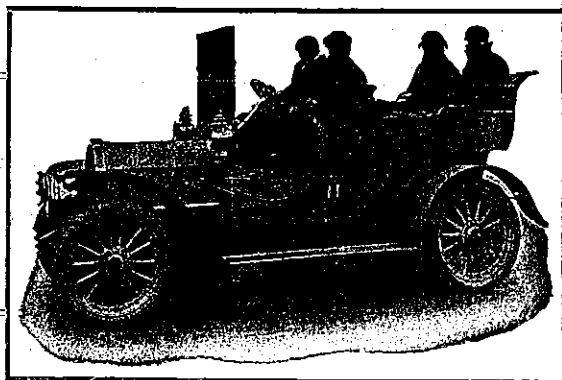


# Motors



# Motoring

## NOTES.

(From Our Own Correspondent.)

London, May 12, 1911.

Undoubtedly the more interesting item in this week's motor news is the fine debut made by the "Thomas" transmission. This takes the form of a villainously severe reliability test under the auspices of the Royal Automobile Club; a continuous non-stop run of 2000 miles over steep gradients having been made.

New Zealanders' enthusiasm over the success of the Thomas transmission will become real when I mention that Mr. Thomas' partner in the evolution of his invention is Mr. K. J. Thomson, a Maori-lander himself, and brother to the one-time surveyor of Karori Borough, Wellington.

The essential features of this really wonderful invention must be referred to. The transmission is by electro-mechanical means, though not essentially an electrical system.

Ever since the petrol car took the popular fancy, attempts innumerable have been made to devise means for providing an infinitely variable gear: that is to say, one which would increase or decrease the engine torque in relation to the driving wheels progressively with the demand for power.

Broadly speaking, no practical application of the principle involved has been made. The friction drive actually gives an infinitely variable gear, but, on account of its very characteristics, has not met with favour in the engineering world.

It has, therefore, been necessary to rest content with the arbitrary ratios, two, three or four in number, which obtain with the well-known epicyclic and sliding-gear boxes. No one ventures to claim for these that they represent constructive finality; hence the interest excited by the Thomas gear.

Not to be too technical, and for the sake of brevity, I will describe the Thomas transmission as one which provides two paths for the power of the engine: one mechanical and the other electrical. These paths are interconnected by means of two (small) electrical machines and a simple, differential-type, epicyclic gear.

Situated behind the engine is the epicyclic gear, the casing of which is made integral with the flywheel. Each of the two "sun" wheels is attached, by means of concentric shafts, to the electrical machines (a dynamo and a motor).

The action of the gear is such that the closing of the field of the dynamo not only causes a current to be generated (which is utilised by the motor), but also puts a mechanical drag on one sun wheel, with the

result that the other has to move, a motion which sets the vehicle travelling. By a simple type of rheostatic control, the drag of the dynamo armature is progressively increased, and causes the vehicle to gather speed.

The reliability trial I referred to earlier was of a two-ton 30/40 h.p. lorry, loaded with four tons of sand in sacks. Over the steepest of hills this burden has been borne by the Thomas transmission. Gradients of 1 in 10 have proved no obstacle. Wet and fine, night and day, for close on a fortnight, the vehicle has run, and testimony as to the excellence of the conception and manufacture of the gear is rendered by the fact that no breakdown has occurred.

New Zealand commercial vehicle users, in particular, and motorists in general, will appreciate the scope there is for this gear in the colonies. For the information of readers of *Progress*, I will mention that 14 Leonard Place, Kensington, London is the address of Messrs. The Thomas Transmission, Ltd.

I may say that I have been watching the evolution of this gear for some time, and have had several runs, on both private and commercial cars, fitted with it. Among the features apparent to even the casual observer are:—(1) Self-starting, per medium of a small accumulator, the dynamo, and the epicyclic gear; (2) from 10 to 20 "speeds" forward, the lowest being so low that the car fitted with it can climb the side of a house; (3) electric lighting, without additional cost; (4) accumulator automatically charged by the dynamo; (5) a smaller engine power is made possible; (6) a higher compression can be used; (7) the engine always runs at the best rate of speed, and therefore generates more power and that continuously.

That we are learning more every day about the prevention of side-slips is brought home to us by the report of the tests held recently of a new gyroscopic anti-skid device. At the outside, let me say that this invention, though certainly a mitigator of skid, is not an infallible preventative. Were it so, a new era could be said to have started. The gyroscopic device consists of a high-speed flywheel, of no very considerable weight, mounted on a bracket as nearly over the front axle as possible. It is allowed a certain amount of vertical movement in order that it may "precess" and set up the force necessary to overcome the skid. The moment the back of the car commences to move sideways, it begins to pull the gyroscope round, an attempt which the latter immediately resists with that wonderful latent energy it is known to possess. Trials have been made with a car on a prepared greasy road surface, and the results, when the gyro-

is working, and also when its action is suspended, prove conclusively that the inventors of the new principle are on the right trail. Incidentally it should be mentioned that the steering cannot possibly be affected.

New Zealand motorists are, as a body, interested in the question of spring-suspension. The cost of driving a car becomes very much enhanced when the springs are either too stiff or too flexible. In either case the tire bill is inordinately high, a fact that points to the economy of laying out a little capital to correct errors in springing. With a car that is sprung too hard at the rear it should be possible to improve matters, either by lengthening the springs, necessitating an alteration to the brackets, or by taking out a leaf and fitting shock absorbers. For a lightly sprung car, I have known several cases in which an additional top leaf has been added, in order to check the rebound action generated when the car is travelling at speed on an undulating surface.

Again the passenger's comfort can be increased if a few pounds are expended in increasing the depth of the cushions, and by upholstering them in such a way that the displacement of the air in them can only occur gradually.

I was riding last week in one of the new 12/20 h.p. Humbers, and can vouch for the gain in comfort which results from having cushions of from nine to ten inches deep.

To an onlooker it would seem strange that the average motorist in the United Kingdom has accepted the imposition of the new motor-car and petrol taxes with the placidity he does. Yet the fact stands. The reason is not far to seek. The money is all being well spent on roads improvement, and therefore is well worth the paying. I wonder whether a similar tax has yet been mooted in New Zealand? If so, and if it goes to better the roads it is a worthy tax. If it is used to relieve the rates it is an imposition.

In Ireland, for instance, the motorists stand to benefit most materially. As I know to my cost, the roads there are in a pitifully decadent state. But a healthy sign is the competitive rush for precedence in favour which the country road authorities are making. It is known that there is not enough tax collected to go round, and, consequently, the County Councils are willingly offering to subsidise any grants they may receive from the newly constituted Road Board.

I mention this matter since I feel that the time is ripe for the New Zealand motorists to get together and agitate for better roads. To gain their point it would pay them to subscribe, by means of a tax,