

no change. Some 5000 of them are on the road, and their behaviour on the roughest roads with full loads warrants the makers in continuing the type unaltered in any respect, in its characteristic of lightness and strength. As a hull climber the model "N," it is said "has practically no equal in the colony, the proportion of power to weight being abnormally high."

The Russell Car.

The 1907 Model "E" Russell contains no alteration of principle, simply owing its excellence to the improvement and refining in all the details from radiator to rear axle, and it will be regarded as a standard type for years to come. As may be seen from our illustration, which we print through the courtesy of the agents, Messrs Magnus, Sanderson & Co., it is more pleasing than its predecessor, the Model "C"; its spring suspension (semi-elliptic springs) will give it better riding qualities, it will have more power, and quieter operation. There

Landing an Argyll.

Argyll cars are despatched from the factory in such a splendid condition that agents have very little to do in the way of tuning up these cars. It may be a surprise to most people using motors to know that the Scott Co drive every Argyll motor car landed in New Zealand from the wharf to its destination. Nothing needs to be done to any of the machines other than connecting the parts and filling the car with oil and petrol. We show on p. 168 an illustration of a 14/16 Argyll being landed on the wharf in Wellington. Forty-five minutes after the boxes were landed on the wharf each machine was out of the case, filled up and ready to drive to the Company's warehouse.

Tops and Covers and Canopies.

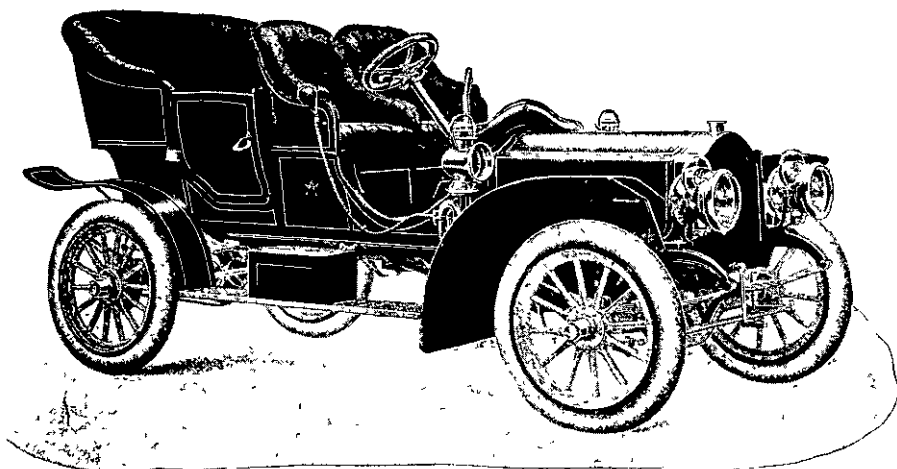
In the beginning the motor was made for the rain to fall on the just and the unjust alike, for

Ohio, makes a speciality of tops of which they have many varieties. Of these perhaps the best is the top covered with rubber duck and lined. Sometimes they use 3-ply whipcord in gray or khaki colours or imitation leather, with of course adjustable hood.

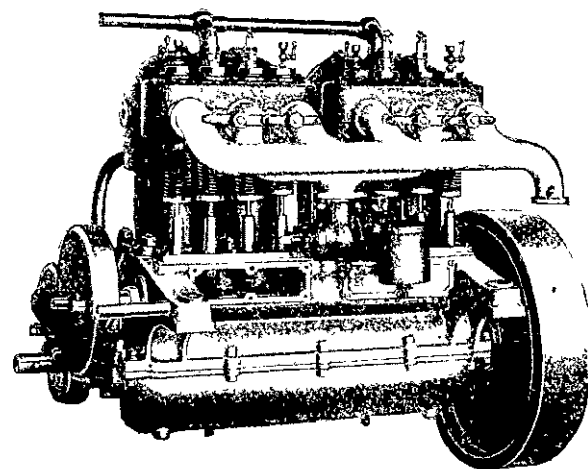
There is a vast variety of fronts, of which the pick is the metal plate glass folding front, or wind shield. It is run very close, however, by the patent adjustable front. In the matter of covers, leather looks splendid, and for that reason many prefer it. But in frosty weather leather may not be folded under penalty of cracking, a consummation every owner always desires to escape, if he can possibly manage it. Imitation leather is even worse.

The Coming of the Light Motor.

How different is the present-day heavy motor cycle from our early dreams. When the novelty of cycling began to wane we possessed far-off dreams of a motor attachment which would nego-



MODEL "E" RUSSELL TOURING CAR, 24 H.P. 4-CYLINDER ENGINE



SIDE VIEW OF RUSSELL MOTOR SHOWING VALVES, INLET AND EXHAUST PIPING AND CAM SHAFT. A MODEL OF COMPACTNESS AND SIMPLICITY

are four vertical cylinders; the valves are all on one side of the motor; the bearings can be tightened without dismantling the motor, all gears are enclosed and run in oil; lubrication is by splash, and the centrifugal water pump is of liberal capacity. The clutch is adjusted by a single nut. The transmission is of selected type, giving three speeds and reverse, all controlled by a single lever with a positive locking device keeping the gears separate. The rear axle is of the floating type, the driving pinions and all the gears are of nickel steel, the driving shaft is supported on ball bearings, both above and below the pinion, and the differential is so arranged as to be removable without disassembling the rear axle. There are besides numerous improvements in control, dust protection, roominess, ingress, and convenience of driving.

12-14 4-Cylinder Renault.

We believe this is the first Renault car landed in New Zealand. Many people who have seen this model are particularly struck with the unique design. The engine is exceedingly compact and is certainly in appearance a very beautiful piece of engineering work. The car is silent, and moves on the road like an electric car. This machine has already proved to be interesting to all motorists. The car has been landed to the order of the Scott Motor & Cycle Co., and is illustrated on p. 163.

the winds to blow untempered on the shorn lamb-like chauffeur, for the frosts and heats to work their wicked wills on the unprotected tourist. These neglected beings first began by devising costumes, and for awhile they swaggered in them attracting the attention of the ubiquitous photographer, and the comic artist. Enveloped in the motor dress everybody looked like everybody else. This proved unpleasing to the ladies. This is perhaps the reason why the motor makers took to devising protection shields, and covers, and canopies. No one can imagine why the obvious necessity was so long ignored any more than any one can deny that when the remedies came they found a grateful world. Nevertheless, when they did come they had to submit to developments before they could be allowed to stay.

The main difficulty was to find a bow socket strong enough for the work. Hoods were often collapsing on the road, therefore, and it was a rare thing to see them fold up in the manner which delights the eye trained to neatness. In this respect Colonel Sprague of the famous factory made himself a public benefactor at an early stage of the march of progress, by overcoming the main difficulty. He did so by the use of a strong drop steel forging welded to a large heavy double or laminated steel tube. It is the bend which under this system is made of the forged steel. This obviates the bending and fracturing of the steel socket, for when you bend a steel bow you crystallise the steel and that is why the common carriage bow is always liable to break on the slightest strain.

Moreover, in the new laminated double steel bows the wood extends to the bottom of the bow thus giving two thicknesses of steel in combination with a regular solid ash bow. Result, the tops always fold neatly back as they ought to, and keep place. The same firm Sprague Umbrella Company of

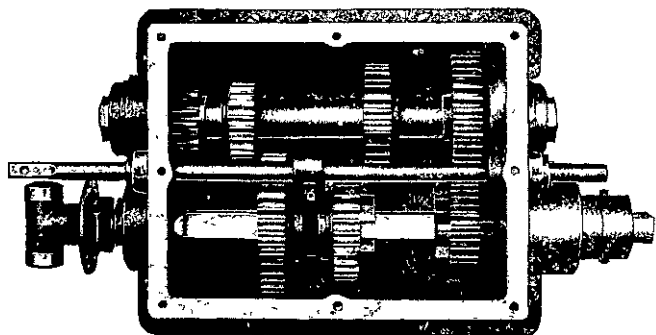
tiate the hills or battle against the wind, which was always a head one. The motor cycle came, but was it what we looked for? The weight, vibration, noise, lack of real efficiency, and general clumsiness resembled more an infant locomotive than a bicycle.

Youth could forgive all these drawbacks and inconveniences in his chase after speed and excitement, but the generation who dreamed of their ideal attachment waited, so far unsatisfied. But the infant locomotives did not satisfy their riders, and being inefficient on the hills more power was called for and more power was given, but the increased power was practically neutralised by the increased weight. The old generation still waited perhaps a trifle more hopelessly. Then from the land "where the watches come from," Switzerland, where mechanics are born, came the Motosacoché (the motor in a handbag), an attachment for ordinary Roadster Bicycles, its total weight is 32 lb with 1½ h.p., simple light, efficient.

The old generation looked interested. The motor cycle world looked uneasy. Could it climb hills? It surely is not possible that this toy can dare to compete with the real motor cycle!

The manufacturers, Messrs Dufaux & Co., entered their invention in the great Continental reliability trials, and against 102 competitors from all countries were awarded first and second prizes on all counts. Success attended them not in one trial only but in dozens.

Could it climb hills? The Dufaux Bros. undertook to climb that majestic mountain, the Grand Salève and in the presence of the citizens of Geneva rose 4000 ft up the unroaded mountain side. This was in June 1904, and this record climb still remains unchallenged. The motor world now realised that the principle of the heavy motor cycle was wanting, and the features of the last Stanley Show were the low-powered light weight motor cycles exhibited, led by the marvellous Motosacoché.



RUSSELL TRANSMISSION CASE WITH TOP REMOVED, SHOWING THE SHAFTS, THE GEARS AND GEAR SHIFTER ROD.



RUSSELL FRONT AXLE.