

The.... ...Motor.

Written for PROGRESS.

The "Ivel" Agricultural Motor.

THERE can be no doubt that motors are of supreme interest at the present time, and they are surely destined to become a great factor in the locomotive and tractive work of the future. Such a possibility must have presented itself very vividly to Mr. Dan Albone, of the Ivel Cycle Works, Biggleswade, England, the constructor of the "Ivel" agricultural motor, who has shown an intimate knowledge of what is wanted in an agricultural tractor, and provided a machine adapted to rough handling and management by unskilled hands. The problem of making a motor suitable for both field and road work is a difficult one, and can only be solved by a compromise, for weight on the driving wheels is essential on the hard road, and lightness is an absolute necessity on the farm, particularly when the land is wet. In fixing the mean between these two extremes, the "Ivel" is driven by a twin-cylinder horizontal petrol engine of 14 b.h.p. The crank shaft is parallel to the axle of the driving wheels, and the revolutions are approximately 800 per minute. The first reduction from the clutch shaft to the intermediate shaft for going ahead is by a Reynold's silent chain gear, and for going astern by pimon and spur wheels, both gears being always in mesh. The drive from the intermediate shaft to the differential gear on the main driving wheel axle is by sprocket wheels and roller chains. The driving wheels are 41½ inches in diameter, with 9 inch treads. The wheels are fitted with grips, making it almost impossible to skid, even if the ground is wet. For work on the hard road these grips may be removed very simply and quickly.

The nominal speed is about four miles an hour, which can be varied by changing the sprocket pimon on the intermediate shaft, and for which provision is made. The motor is fitted with one speed ahead and one astern, each driven by a separate cone clutch, and both operated by one and the same lever. The ahead clutch is held into gear by springs, and out of gear by the lever; the astern clutch has no springs, but is forced into gear by the lever, thus the change is as simple and positive as could be desired. There are no cogged wheels to be brought into or out of mesh, and there is no possibility of both gears being in action at the same moment. The engine shaft is continued through the side casing and carries a pulley for use in driving stationary machinery by belt. The "Ivel" runs on three wheels—two driving wheels, one steering wheel in front. The total weight with tank full of water is 30 cwt., the weight on the driving wheels being 22½ cwt. It is unnecessary to set out the innumerable advantages which must accrue, particularly to the agriculturist and farmer, in being able to dispense with horses, their expense of up-keep, sickness, the necessity for having reserves, and the slow manner in which work is accomplished where horses are employed; all these tend to make their use an

expensive and burdensome item in the cultivation of land. An absolutely reliable machine, which will accomplish all haulage work more economically, more cheaply and more satisfactorily, is bound to appeal to every agriculturist and farmer; and in the "Ivel" agricultural motor we have a machine which is easy to control, simple in construction, and applicable to every form of implement at present drawn by horses, and every type of machine such as chaff-cutters, threshing machines, etc., where engine power has now to be employed. The "Ivel" motor is capable of hauling two or three furrow ploughs, reapers and binders, mowing machines, or, in fact, any agricultural implement used for the cultivation of the land. It can also be used as a tractor for pulling loads on the road. Any existing agricultural machine can be attached, the connection being made by taking out the poles usually fitted when horses are employed, and a small spring coupling, which is supplied with the motor, substituted. Apart from working in the field the capabilities of the "Ivel" are invaluable on the farm, for it can be utilised for cutting chaff, pulping roots, grinding corn, pumping, sawing wood, driving a dynamo, and any work at present accomplished by the ordinary stationary engine. In the various trials that have been held, the motor has demonstrated that in practical work it has even succeeded its constructor's most sanguine expectations.

Drawing a 3-furrow plough it has ploughed 11 acres, 1 rood, 13 perches of wet loam land in 17 hours, 28 minutes, at a total cost of 5/- per acre—this including petrol, lubricating oil, men's time, etc. With a reaper and binder attached it has cut 19 acres of wheat in 10 hours at a total cost of 1/9 per acre. Its record in chaff-cutting, driving a 5-knife cutter is 1 ton, 1½ cwt. cut to a gauge of ¾ inch long, in 47 minutes, and at a cost of 2/6. The above are the results of actual trials carried out under ordinary conditions and certified to by eye-witnesses. One of these motors is at present at work on Mr. Isaac Lupton's farm at Waverley, Taranaki. The "Ivel" was exhibited at the Christchurch Show, held in November, 1904, and its first appearance was greeted by the award of a special gold medal for general excellence.

The speed of motor cars is a subject of considerable discussion throughout the colony at the present time, and complaints regarding excess of reasonable pace are frequent and free. Country people particularly object to fast travelling by motorists, and local bodies are cudgeling their brains to discover a means of checking the evil. The matter was briefly discussed at a recent meeting of the Hutt County Council, and it was stated there that it was impossible to fix a minimum rate of speed. In support of this an opinion given by Mr. T. F. Martin,

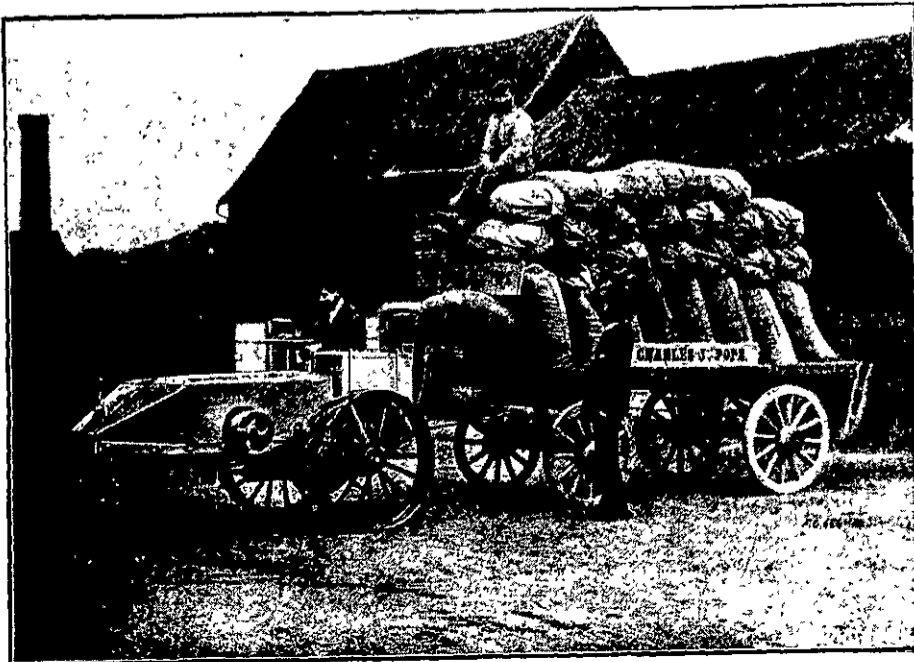
a motion for next meeting that the Council's solicitors be asked to draft by-laws to regulate the motor car traffic.

A vast show of motor vehicles has just been opened at Olympia, in West London, and is pronounced by far the best exhibition of the kind ever seen. It is specially interesting, as showing the remarkable progress which the last few years have brought in the acceptance of mechanical motors for road use. This is not the place in which to enter into descriptions of the exhibits. That would amount simply to an advertisement, as, in truth, does the exhibition itself. But the indisputable fact of the progress which this demonstrates is well worthy of record in this column. There is one point, however, in which not only the exhibition, but the industry itself, undoubtedly lies open to criticism. Splendid and costly motor-vehicles, running into a cost of thousands sterling, are to be seen in crowds, but as yet there is no symptom of any movement in the direction of cheapening these costly luxuries to such an extent as to bring them within the reach of people of moderate means, or, indeed, of anyone not possessed of considerable wealth. In view of the large demand which undoubtedly exists and is rapidly increasing for road motors of moderate cost, it would be worth while, one would imagine, for some manufacturers to devote their attention towards supplying this want. That the first one who does so effectively will command a vast fortune as a reward, there can be no doubt whatever. But in view of past experience in connection with this industry, one cannot help fearing that our dilatory Britishers, instead of leading the way as they ought to do, will be content merely to follow in the rear when Europe and America have shown them the road. That is what they have done so far as regards road motors: that is what appears to be their probable course in the future.

Mr. Cecil A. Whitney, of Auckland, has a new launch. As soon as the New Year holidays were over Mr. Whitney arranged with Messrs.



THE "IVEL" AS AN AGRICULTURAL MOTOR.



THE "IVEL" AS A TRACTOR.

counsel to the New Zealand Counties' Association, to the Waitotara County Council was read. It stated that "as the Motor Cars Act defines the speed as a reasonable speed, the local authority cannot by a by-law fix any maximum rate of speed. By reasonable speed is meant a speed reasonable under the circumstances of traffic through which the car is for the time being passing." Notice was given of

Lane and Sons, the builders, to take the launch out of the water and finish the work they were unable to complete owing to the launch being required for cruising purposes during the Christmas and New Year holidays. The launch would have been finished according to contract time but that the engine (which is a 50-b.h.p. Monarch) was shut out on two occasions from the San Francisco mail steamer. Recently the launch came up to Auckland from Howick Wharf with a party of seventeen on board, and towing a dinghy, in 6¼ min. under the hour, the launch being driven not over three-quarter speed, as the owner considers it desirable not to run her at full speed until she has been in commission a short time. The launch was to have been placed in the water again about the middle of last month and duly christened the Grey Witch. Mr. Whitney intends entering her for the speed launch race at the annual Auckland regatta. The Grey Witch has a water line of 42½ ft, and a beam of 6 ft. 5 in.

A Producer-Gas Motor Boat.

Messrs. Thornycroft and Co., of Chiswick, are the builders of a new departure in motor boats, as up to the present gas plant has been considered too heavy for use except in boats where weight is