



## Road Trials of Two Unconventional Links between the Motor and the Pedal Cycle.

**M**OTOR cyclists are apt to look with some disdain on anything which savours of the motorised bicycle, but there are many people in the world with no interest in motor cycles who would welcome some mechanical assistance for the pedal bicycles which they ride.

That this class is a large one may be gauged by the enquiries which the makers of certain auxiliary motor units receive, and it is generally found that these potential users of motor-assisted bicycles are persons of middle or advanced age, who persist in riding the excellent pedal cycles which they acquired in the boom period of the bicycle trade, perhaps twenty years ago. Most of these people, many of them ladies, could afford motor cycles if their inclinations leaned that way. They are not anxious for speed, however, have no aptitude for things mechanical, and are sentimentally attached to their old and faithful bicycles.

Various motor attachments for the pedal cycle have been made from time to time, but few have survived. In some cases the auxiliary engine has been of itself unsatisfactory; in most cases, however, the trouble has arisen from the

application of a power unit and transmission directly to the bicycle frame. Bicycle frames, forks, and wheels, built as they are to withstand only the stresses imposed by the elastic propulsive effort of the rider, soon show signs of trouble under the unsympathetic impulse of even the tiniest mechanical power producer. Higher speeds, too, invariably tell their tale on wheels, tyres, and steering head bearings.

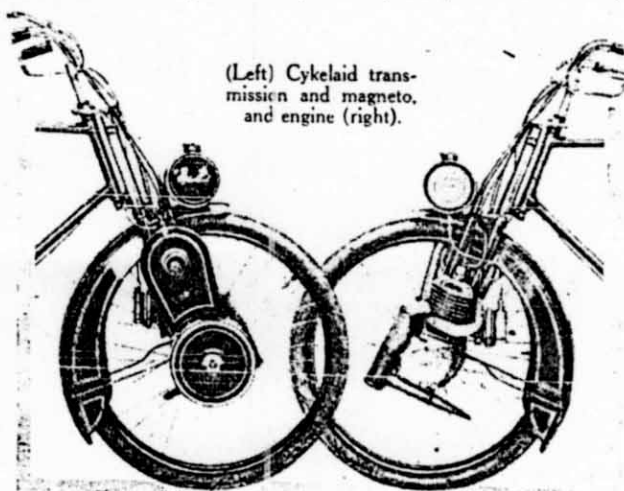
Then, again, there is the question of convenience. If the motor attachment is intended to fit to the frame, it is probably inapplicable to ladies' cycles. If the attachment is carried over the rear wheel the centre of gravity is raised and moved rearwards, and, incidentally, all "carrier space" is lost.

All this was considered by the Sheppee Motor Co., Ltd., of York, when the Cykelaid attachment was evolved.

The Cykelaid is a motorised front wheel, which, carried completely in its own spring fork, simply replaces the front wheel and fork of any ordinary bicycle, tricycle, or tandem, so that no structural alterations are required in any way. At the base of the front forks are lugs so arranged that a tube, flanged at one end, can be clamped across them. This tube acts as the front wheel spindle, and on it, on cup and cone bearings, the hub revolves. In each end of the tube are ball bearings which carry the crankshaft, on the off-side end of which is fixed a flywheel magneto. The other end of the shaft has the crank web, to which is fixed the short crankpin.

*The real intent of this article might perhaps be more clearly indicated by amplifying the title to "First Steps in Motor Cycling for Elderly Pedal-cyclists and other non-enthusiasts whose Main Requirement is a Convenient and Economical Medium of Transport." The real motor-cyclist-to-be's first step towards the realization of his ambitions usually implies the purchase of a conventional motor cycle, be it a 150 c.c. miniature or a 1,000 c.c. sidcar outfit. It is not to him that the accompanying description of road experiences on two "half-way machines" is intended to appeal; it is rather to the absolutely disinterested and technically ignorant member of the general public who does not wish—at present, anyhow—to become a motor cyclist, but who desires to enjoy some of the advantages of a self-propelled two-wheeler.*

*If both trials are faintly tinged with the motor cyclist's view-point it is simply that no one who has once motor cycled can ever regain the attitude of the absolute novice toward his first mechanically-aided ride.*



(Left) Cykelaid transmission and magneto, and engine (right).

**First Steps in Motor Cycling.—**

To the flange on the near side of the hollow spindle is bolted the crank case. The engine is of the two-stroke, three-port type, and the big-end runs on roller bearings.

The drive is taken from a sprocket behind the flywheel to a small cork insert clutch on a short shaft running in self-aligning bearings in a housing secured between the fork blade and girder.

A sprocket on this shaft conveys the drive back to the hub by chain. The wheel is fitted with a 26 x 2 in. tyre, and the tank for petrol mixture is mounted across the fork girders. This, briefly, is the Cykelaid layout, and it will be obvious that it imposes no unusual structural stresses on the cycle frame to which it is fitted. The price of the attachment alone is £24 3s.

Our test of the machine commenced in the traffic of Manchester. It had been delivered by train, and was therefore taken over without previous instruction or demonstration.

The handle-bars were adorned with two carburetter levers (Amac), a right-hand inverted lever for a front wheel brake and a left-hand inverted lever which was found to operate clutch and compression release together.

The engine started very easily, the procedure being to pedal in neutral a few yards before gradually dropping the clutch and decompressor lever, which, when only partly raised, releases the compression without withdrawing the clutch. Contrary to expectation, the Cykelaid, which was attached to a lady's cycle, steered in a perfectly steady way once it was under power, and the engine seemed quite capable of all that was required on normal little trips in the suburbs. The pedal cyclist would probably find it perfectly controllable at even the slowest speeds.

**Manchester to York.**

Ordinarily one would not expect to undertake long cross-country journeys on a motorised bicycle, but as such a run seemed to be the only way of testing the machine it was decided to return it by road to the maker's works at York. This journey was accordingly undertaken, and although the tramlines at the start were greasy after heavy rains during the night no skids were experienced. Twice in the traffic stops were necessary, and one longed



The open frame appeals to the lady pedal cyclist.

for a separately controlled clutch. (The makers find, however, that with such a fitment the average user forgets the decompressor when starting.)

To Oldham the journey to Yorkshire is a seemingly endless tram-track, with some long gradients, but no pedal assistance was required. Beyond Oldham the road rises over the Pennines in long, firmly graded climbs, and only once, for about twenty yards, were the pedals touched. After skirting Huddersfield, there are one or two rises of perhaps 1 in 20 to 1 in 15, where the engine showed signs of distress and the pedals were needed more often; on looking down at the engine, however, we noticed that the ring retaining the spring abutment plate of the carburetter mixing chamber had become unscrewed. On this being re-

placed, no further recourse to the pedals was necessary. During the stop the opportunity was taken of looking in the tank. To our surprise, less than half of the half-gallon of petrol put in at the start had been used during the first thirty miles.

**Surprising Speed.**

Leeds was negotiated with one traffic stop and a little pedalling in neutral, and the York road *via* Tadcaster was followed without incident, except that on some of the long rises the occupants of the innumerable cars travelling towards the big agricultural show at York appeared surprised to see a motorised bicycle all but keeping pace with them, while motor coaches and lorries were easily overhauled. No one, of course, expects great speed from such a machine, and no effort was made to push it beyond what felt comfortable for the engine, yet it became obvious that the journey was being done at very near the legal limit.

Between Leeds and York many miles were ridden "hands off" with every feeling of safety and confidence, yet the writer doubts his own ability to ride an ordinary lady's cycle hands-off for a single yard.

York was reached in four hours, which, for a 70-mile journey, involving climbing from near sea-level to about 1,000ft. up, as well as some 15 miles of dense traffic, is extremely satisfactory. At the finish the tank contained an estimated "ten miles" of petrol mixture, so that the consumption had been 150 m.p.g.

**SIMPLY A RUNABOUT.**

In the same class as the Cykelaid, yet different, the K.U.M. is the Kenilworth miniature re-designed with a friction transmission. It is essentially a "run-about" intended for light hack work, such as town shopping, but capable of considerably harder service. With this end in view, the designers have endeavoured (and successfully) to make the machine easily controllable at the very low speeds and frequent stopping and

starting required in traffic. It was under such conditions that we tried the machine—a run through some eight miles of London traffic to a south-western suburb, a return by the same route, and finally a journey across Central London. An incessant drizzle and thick grease was the order of the day.

There is a certain fascination in being able to obtain exactly the required gear ratio by simply moving a small

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