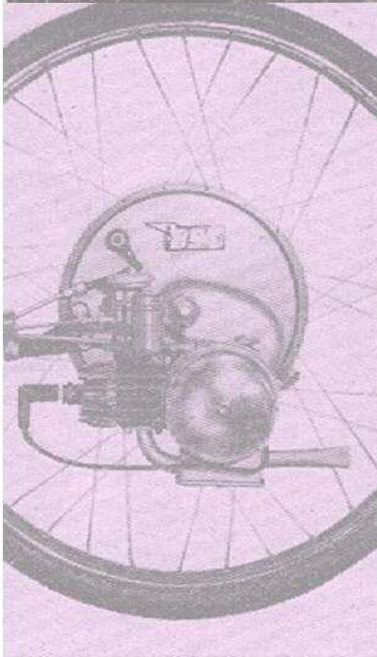


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In the heart of London's traffic or on the open road the 98 c.c. Raynal is a willing and excellent performer

THERE are now several different types of motorised bicycle on the market, most of which it has been my good fortune to ride. During the last few weeks I have had in my stable a 98 c.c. Villiers-engined Raynal—and a very interesting little job it is. It has several unusual features, chief of which is a sprung front fork. There are also a clutch, normal pedalling gear and a back-pedalling brake which is designed to avoid accidental application when the engine is in use.

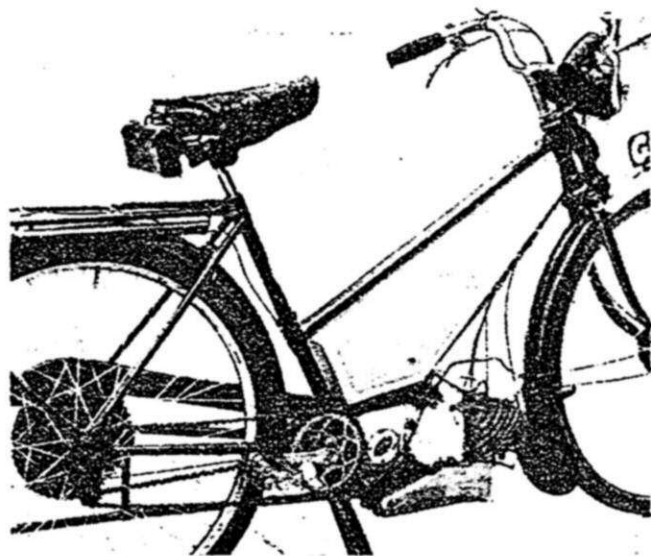
On machines of this type a spring fork is generally considered a luxury, but at the speed of which the Raynal is capable, it is very nearly a necessity. A short, laminated spring is employed, which allows a fore-and-aft movement of the fork blades. This movement can, to a certain extent, be adjusted by tightening or slackening the shock absorbers.

Back-pedalling Brake

A back-pedalling brake is an advantage on a motorised bicycle because it reduces the number of handlebar controls. However, this type of brake normally has the disadvantage that the slightest backward movement of the pedals applies the brake. On the Raynal, a hub-type brake is fitted, and this is operated by lever and rod from the pedals. The lever, which works on the ratchet principle, engages with the pedals only when the offside pedal is just past the horizontal position behind its crank. With this arrangement it is possible to ride many miles and shift the position of the feet without fear of the brake being accidentally applied over bumpy surfaces. Another feature of the Raynal is its open-type frame—an obvious advantage for riders of the fair sex.

On the

“Ambleside” Tries a Motor-assisted Bicycle that has Several Interesting Features : A Small Machine with an Excellent Performance



The Raynal can be used as an ordinary cycle if the engine is disengaged by means of the small trigger on the clutch lever. The cycle chain can be independently adjusted

The handlebar controls consist of a clutch lever, with a trigger lever to keep the clutch out when required, a decompressor for starting and stopping the engine, a throttle lever and a front-brake lever. Attached to the fuel tank is a small knob, which operates a simple form of carburettor choke to facilitate starting from cold.

There are two ways of starting the Raynal. One can either pedal off and, after gaining sufficient speed, let in the clutch, or one can paddle off—both ways are equally simple. When starting from cold it is both necessary to flood the carburettor and to use the choke; after a hundred yards or so the choke can be taken out.

The 98 c.c. Villiers engine pulls away from walking pace to its maximum without a trace of snatch, and the drive is taken up so gently that the veriest novice need have no fear of the machine running away with him. Such flexibility, coupled with extremely smooth running, inspires confidence at the outset. And, above all, the little engine is exceptionally quiet.

The drive from the engine is taken through a countershaft and clutch to the rear wheel by a chain on the near side of the machine. On the off side is the normal pedalling gear. The two methods of transmission are quite independent.

Road with a Raynal

In many respects the Raynal handles in exactly the same way as a cycle. With the drive disengaged by leaving the clutch withdrawn, the machine can be ridden as a cycle. The pedalling gear is not unduly low—in cycle terms the gearing is 60, or in other words one revolution of the crank turns the rear wheel through two complete revolutions. Because it resembles a cycle in many ways, the Raynal is extremely manoeuvrable in traffic, either with the engine or without.

Raynal is the absence of a chain guard on the off side. A guard is fitted over the transmission chain, but when the machine is being pedalled the off-side chain is apt to trap the rider's trouser leg.

From an economical viewpoint the Raynal is an exceptional little machine. It covered just over 115 miles on one gallon of petrol mixed with half a pint of oil. This fuel consumption was measured on the runs to and from the office, i.e., under traffic conditions.

Throughout the time the machine was in my possession the engine remained clean except for a slight film of oil in the vicinity of the carburettor; this was probably due to blow-back, which was noticeable when accelerating from a slow speed.

The Raynal is just as happy on full throttle on the open road as it is pottering round town streets. At all speeds the engine is remarkably free from vibration.

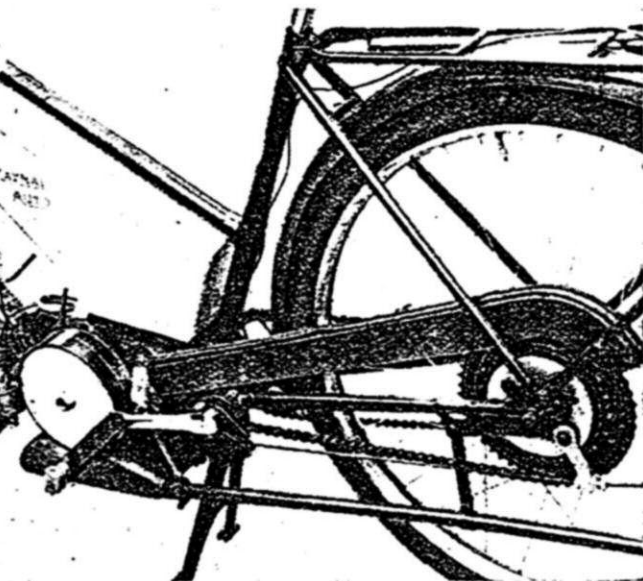
Restarting with a dead engine on a steep hill calls for a certain degree of skill, but on account of its exceptional manoeuvrability (the machine can be turned in its own length) it is far simpler to start the engine down hill and then turn the machine round, pedalling when and as required.

Efficient Brakes

The brakes are in keeping with the excellent standard of the rest of the machine. They are both light in application and efficient in use. The rear brake in particular is surprisingly powerful; it is applied with the right foot through the medium of the pedals. Incidentally, a feature of the Raynal is that the chains can be adjusted independently.

The equipment includes Villiers flywheel-dynamo lighting, 26 x 1½ in. Dunlop tyres, "Shockstop" handlebar grips and a fuel tank with a capacity of 1½ gallons. Yet the price of this efficient and economical little machine is only £18 18s.

For a rider of medium height the Raynal is a comfortable machine. Ample provision is made for the adjustment of both saddle and handlebars.



A 98 c.c. Villiers engine provides the power for the Raynal. The rear brake is operated by the pedals

When traffic or other conditions demand, the engine can be throttled down to walking pace; if a slower speed is desired the clutch may be slipped slightly while the pedals are used. Even from a standing start the Raynal will accelerate without the rider pedalling. On steep hills it is sometimes necessary to assist the engine with a little light pedalling, but for the most part the pedals can be forgotten.

The maximum speed of the Raynal is between 28 and 30 m.p.h. and it can be ridden on full throttle for mile after mile without the engine showing any signs of tiring.

I have ridden the Raynal on several occasions between my home in North Surrey and the office, through some of London's densest traffic. By train this journey takes me 45 minutes from door to door. By road, a distance of 13½ miles, it usually takes me 35 minutes on a fast solo. On the Raynal it takes only five minutes longer.

Cheap to Run

On these journeys I was able to appreciate the advantages of the sprung front forks. But I should have welcomed a larger and more comfortable saddle. Another small criticism that can be made against the